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LECTURE XLVII.

CICUTA VIROSA:—*Botanical characters of the water hemlock. Effects of poisoning therewith. Treatment and post-mortem appearances.* ŒNANTHE CROCATA:—*Botanical characters of, and poisoning with, the hemlock waterdrop-wort. Eaten for celery. Treatment and post-mortem appearances.*—ÆTHUSA CYNAPIUM:—*Botanical characters of fool's parsley. Eaten for salad. Poisoning therewith. Post-mortem appearances.* SCILLA MARITIMA:—*Over-doses of squill. Treatment. Post-mortem appearances.*—COLCHICUM AUTUMNALE:—*Its botanical characters. Effect of season thereon. Sometimes taken with impunity. Poisoning therewith. Post-mortem appearances. Its active principle, Veratria; its characters and qualities. Treatment.* ACONITUM PANICULATUM:—*Its history. Poisonous quality of the species. Botanical character. Symptoms of poisoning with the plant. Its active principle, aconitina. Poisoning therewith. Treatment.* SECALE CORNUTUM:—*Characters of the acinula clavis. Poisoning with diseased rye in bread. Over-doses of ergot. Its use in parturition.* NUX VOMICA:—*Its poisonous qualities. Modification of these in some animals. Its employment as a means of suicide. Symptoms. Distinction between poisoning with nux vomica and with pure strychnia. Post-mortem appearances. Its mode of action. Its alkalies, strychnia and brucia. Chemical tests. Poisoning with St. Ignatius's bean.*

GENTLEMEN:—Cicuta *virosa*, water hemlock, is an indigenous umbelliferous plant, which has long been known as poisonous to cattle. When LINNÆUS made his tour in Lapland, hundreds of cattle died without any assignable cause. On investigation, the botanist found that it arose from the water hemlock, which abounded in every meadow, and had been cropped by the cattle.

This plant is an aquatic, with a thick, fleshy, root, interspersed with lacunæ, or cavities, which are filled with a yellowish milky-looking juice. The leaves are large, composed of tri-pinnate leaflets, on a cylindrical furrowed stem, rising from two to three feet in height. The umbel, which is situated at the extremity of the stem, consists of from ten to fifteen equal rays; the flowers are small and white, with the petals spread equally; the fruit is globular and angled. Cicuta *virosa* is readily distinguished from the conium *maculatum*, by the stem being simply striated, without maculæ, by the form of the foliage, and by the inflorescence, as well as the thick, fleshy root.

This plant has been occasionally eaten by the ignorant instead of parsnips; its operation is more topical, in the first instance, than that of most of the other narcotico-acrid plants; it causes inflammation of the stomach, with dryness of the throat, and severe vomiting, which are followed by acute headach, dimness of sight, and total insensibility. Tetanic convulsions frequently supervene, and an involuntary discharge of urine takes place, demonstrating that the influence of the poison is exerted chiefly on the spinal chord. WEPFER ascertained, by a series of experiments upon dogs, that this is really the case. The tetanus was intermittent, and terminated fatally on the third day. The same author has also detailed the effects of the boiled root on eight children, two of whom died. One of them, who recovered, had tetanic spasms, followed by coma, from which she could not be roused for twenty-four hours. The opisthotonos was so great that an infant might have passed under the spine of the affected child.

The post-mortem examination of the body in death by poisoning with cicuta *virosa*, displays nothing unusual, except a gorged condition of the brain. The spinal chord does not appear to have been examined in

any of the cases; I have never seen a case of poisoning by it.

The treatment consists in clearing the stomach of the poison as rapidly as possible, by means of emetics; and, afterwards, employing the same remedies as in cases of poisoning by narcotics, to subdue the narcotism. Dashing cold water upon the face and chest, or pouring it upon the back of the neck, has been productive of very beneficial effects.

Another umbelliferous aquatic is equally poisonous, namely,

ŒNANTHE CROCATA.

Œnanthe *crocata*, hemlock water dropwort, is a common indigenous plant, growing on the banks of ditches and in watery places, flowering in June; it grows to the height of two or three feet; the root is fleshy, and filled with a milky-looking juice, which becomes of a yellow, saffron hue, when it is exposed to the air. The leaves are large, and supported on a dilated petiole; they are three times winged, and formed of deeply-incised leaflets, with obtuse divisions. The flowers are white, pressed one against the other, and supported on umbels composed of rays so short that the umbellules appear also as if compressed upon one another; both the involucres and the involucels are composed of linear leaflets: the fruit, which is crowned both by the persistant calyx and the styles, is ovoid and oblong.

Every part of this plant is poisonous; its recent juice is so acrid that it excoriates the skin when it is applied to it. A man who was employed by MM. Cormerias and Pinan-Dufaillay to crush the plant, preparatory to their making an analysis of it, was attacked with irritation of the hands and the arms, with sharp, lancinating pains, an eruption, swelling of the face, acceleration of the pulse, and other symptoms of great irritation, which continued for fifteen days. A morsel of the root, the size of a walnut, was eaten by a man, and killed him in two hours. The symptoms were rigors, heat in the throat and stomach, delirium, convulsions, and coma. These symptoms were accompanied with red, ecchymosed patches on the face and chest, and loss of sensibility. The effects of the poison were not felt for some time after the root was eaten, but death ensued in four hours. Ray, the botanist, has described eight cases of poisoning by œnanthe *crocata*, of which five proved fatal, and Mr. Watson has related one which terminated in death in three hours and a half, although the symptoms did not commence for an hour and a half after the poison was swallowed.

The herbaceous part of the plant has been mistaken by the ignorant for wild celery, the foliage of which it somewhat resembles.

Mr. Howell, of Haverford West, relates a case of this kind, in which eleven French prisoners were poisoned by mistaking it for celery. Eight of them were strongly affected, but two only died. Indeed, numerous instances of the poisonous influence of œnanthe *crocata* are on record. The poison, whatever it may be, is a fixed substance, as the distilled water of the plant is not poisonous; and from the length of time occurring between taking the poison and the commencement of its effects, it appears to be evolved by the digestive process, and afterwards taken into the circulation. The post-mortem examination of the body demonstrates its powerful topical action; but, besides the stomach, the membranes of the brain also display indications of inflammatory action. The treatment in cases of poisoning by œnanthe *crocata* is simple. It consists in emptying the stomach as rapidly as possible by means of emetics; in subduing the inflammatory action, both general and topical, by bloodletting; in administering, liberally, demulcents and diluents; and, when the force of the primary symptoms is abated, in giving the vegetable acids.

ÆTHUSA CYNAPIUM.

Æthusa *cynapium*, fool's parsley, is an indigenous plant, very common in gardens, and found often growing amongst parsley; hence many accidents have resulted from its being eaten with that plant. The root is fusiform; the stem branched, cylindrical, hollow, and frequently reddish at its lower part; the plant seldom exceeds, in this country, two feet in height. The flowers are white, supported on umbels, with unequal rays; there are no involucres; the involucels are linear, long, lateral, and pendent, which readily distinguishes it from parsley; it is also distinguished from that plant by its fœtid odour, which adheres to the fingers when the plant is bruised between them.

Æthusa *cynapium* has often been eaten as a salad, and has frequently caused death. M. Lale, a physician practising at Fontesrault, has published two cases of poisoning by æthusa *cynapium*, eaten in a salad. In one the effects were not felt until an hour after the salad was eaten, when the patient was attacked with vertigo, nausea, coma, cold sweats, and coldness of the extremities, which soon terminated in death. The body rapidly became covered with large ecchymoses; and, on opening it, the stomach presented signs of previous inflammation, as was also the case with the peritoneum. The spleen was gorged with blood; the lungs were also tinged with blood; and all the cavities of the heart were filled: the brain was not examined. In the other case, much of the poison was rejected by vomiting; but, nevertheless, chronic gastritis supervened, and in a few weeks the patient died.

The body was much emaciated; there was phlogosis of the peritoneum and intestinal canal; suppuration of the villous coat of the stomach; ulcerated spots in the small intestines; and scirrhous portions in the omentum.

SCILLA MARITIMA.

When the Scilla *maritima*, squill, the bulb of which is a well-known article of the Materia Medica, is overdosed, or, when it is taken by some individuals, even in moderate doses, it displays poisonous properties; but the latter effect depends upon idiosyncrasy. VOGEL mentions a case where grs. xxiv. proved fatal. I have witnessed several instances in which the ordinary medicinal dose of the tincture, or the powder of the dried squill, caused very alarming symptoms; violent colic, purging, palpitation of the heart, difficult or embarrassed breathing, dilatation of the pupils, and bloody urine. In one case, which terminated fatally, an eruption, not unlike that of purpura *hæmorrhagica* appeared, attended with a considerable degree of collapse. Such instances, however, are rare. No cases of squill used expressly as a poisonous agent are on record.

The post-mortem examination of persons poisoned by squill has displayed inflammation of the mucous membrane, and a slightly gorged condition of the brain.

The treatment, after clearing the stomach by emetics, consists in the liberal administration of camphor, opium, and cordials.

COLCHICUM AUTUMNALE.

Colchicum *autumnale* has been longer known as a poisonous plant than as a therapeutical agent. It was the hermadactylis of the ancients, and it is mentioned in several of the writings of the old herbalists as a powerful remedy for gout. Every part of the plant is poisonous, its botanical characters, therefore, should be well understood. It is an indigenous annual plant, with a perennial root, and is found growing in rich meadows in Essex, Suffolk, and many parts of England; and, indeed, over the greater part of Europe. It sends up a naked, pinkish-lilac flower in August and September, whence its specific name. The bulb, which is reproduced every year, is solid, like a small egg, covered with a brownish coat, and indented on one side by the young stalk; the leaves, which appear in spring, are radial, spear-shaped, and from ten to fourteen inches long, although only five inches above the ground. The seed-vessel of the flower which appears in autumn, is elevated in the bosom of the leaves: it is a three-lobed, three-celled capsule, seated on a thick, short peduncle. The seeds ripen about the end of June. The flower consists of a monopetalous corolla, with a tube of considerable length, and a limb divided into six lanceolate, keeled segments; the filaments are subulate, adhering to the upper part of the tube of the corolla, and supporting yellow, erect anthers. The stigmas are revolute.

Climate and season have a considerable influence in modifying the poisonous properties of colchicum *autumnale*; and, on this account, the most opposite opinions of its influence have been frequently held by different writers. HALLER says that it is both tasteless and inert in autumn, although that is the period of the year when it is most active in this country. KRAPF, a German author, says that the bulb is eaten in Carniola and Istria, and CRATCHWILL, another German, states that he ate ℥ss. of the bulb with impunity. M. COLLINS, also, mentions more than one instance in which the bulb had been eaten without any poisonous result. STOERCK affirms that he ate an entire bulb with impunity.

Idiosyncracy must, however, be kept in view in explaining some of these facts. I knew a lady who took, by mistake, f ℥x. of the wine of the seeds of colchicum at one draught, without experiencing the smallest inconvenience from this extraordinary dose.

Every part of the plant, the bulb, the leaves, the flowers, and the seed, is poisonous. The influence of the bulb and the seeds, as medicinal agents, is well known; and they have frequently proved fatal when the medicinal preparations of them have been overdosed.

The *flowers* have frequently proved fatal to cattle that have been feeding in the meadows containing them. GARIDEL relates the case of a man who having eaten these flowers as a remedy in ague, was afflicted with severe pains of the bowels, and also general pains, which continued for three days. They possess the same medicinal properties as the bulb and the seed.

The *seeds* have a sweetish taste, and are, consequently, attractive to children. BRENT, a German author, has recorded an instance of two children who ate some of the seeds; they vomited most violently; and one child died.

The *symptoms* of poisoning by colchicum, are violent and incessant vomiting, accompanied with hypercatharsis of thin, bilious stools at first, which are followed by others having the appearance of washings of meat; and these are succeeded by bloody stools. There are great anxiety, violent agitations, extreme prostration of strength, and cold clammy perspirations, preceding the fatal issue. In some of the recorded cases, delirium is mentioned, but I have never seen any affection of the sensorium in those cases which have come under my notice.

The *post-mortem* examination of the body has displayed redness, indicating inflammation of the mucous membrane of both the stomach and the intestinal canal; this mem-

brane is also interspersed with dark-coloured spots, resembling gangrene; the brain is natural.

Veratria.

The active principle of the colchicum is *veratria*, a resinoid which was discovered by PELLETIER and CAVENTOU, in 1819. It has been found also in the seeds of veratrum *album*, and those of helonias *officinalis*, in all of which it exists in the state of a gallate. Veratria, when separated from the vegetable matter, and freed from the gallic acid, is colourless and pulverulent, with an acrid taste; but it is free from bitterness: it has no odour; nevertheless it excites, when snuffed up the nostrils, the most violent, long-continued sneezing. When it is internally administered, in large doses, it causes, first, nausea and vomiting, and then hypercatharis, collapse, and death. In no instance have I seen recovery to take place. The habit sinks rapidly, and it cannot again be roused, nor has any thing been able to check the purging.

Veratria is nearly insoluble in cold water, and even in water at 212°; the quantity must be 1000 parts of the fluid to one of veratria; æther takes it up sparingly; but alcohol dissolves it most readily. It has an alkaline reaction, and neutralises acids, but it does not form readily crystallised salts: it is a compound of carbon, hydrogen, oxygen, and nitrogen.

Veratria, in poisonous doses, has a more decided topical action than any of the other narcotico-acrid poisons, inflaming violently the mucous surface before it displays its narcotic influence. In doses of two grains of the acetate it kills a strong dog, causing vomiting and hypercatharsis, and tetanic spasms before death. It has very rarely been administered internally, on account of its acrimony; but M. MAGENDIE has recorded a case of apoplexy in an old man to whom he gave it; at first to the extent only of a quarter of a grain, and afterwards, by gradually augmenting the dose, to one grain and a half, and two grains in twenty-four hours.

In cases of poisoning by colchicum, I am not aware of any means of determining the nature of the poison except by the symptoms. If veratria itself have been given by mistake, and any of the poison remain, it may be recognised partly by its physical characters, and partly by the action of nitric and sulphuric acid upon it. The former is first reddened, and then changed to yellow; but the latter is first changed to yellow, then to red, and, lastly, to a violet colour: but several of the other resinoids are affected by these acids in nearly the same manner, consequently the result of their action is of no value, unless in combination with the symptoms.

With regard to the treatment of cases of poisoning by colchicum, or any of its preparations, or by veratria, the first object is to evacuate the stomach, and then to administer freely opium, camphor, brandy, and ammonia: but, as I have already informed you, in no instance have I seen recovery follow from any treatment.

ACONITUM PANICULATUM.

Aconitum *paniculatum*, which has been long known as a poison, and as a medicinal agent, and is now more than ever employed, on account of the resinoid which it yields, is a poison of great power.

The early period at which its poisonous influence was known, may be collected from the fables which pretend to describe its origin. OVID, in describing the ascent of Hercules from hell, dragging after him the triple-headed Cerberus, says, that the rage of the dog, on being exposed to the light of the sun, caused him to emit a froth which impregnated the soil with this poisonous plant.

"Has concresse putant, nactasque alimenta feracis
Fecundique soli, vires cepisse nocendi,
Quæ quia nascuntur dura vivacia caute
Agrestes ACONITA vocant." *

AUSONIUS makes the growth of the blood of the wound of Prometheus,—

"Unde Prometheo de corpore sanguineus ros
Aspergit cautes, et dura ACONITA creat cos." †

The name "aconitum" is, with much probability, according to ANTIGONUS CARYSTHIUS, derived from Acones, a borough in the neighbourhood of Heracleum, in Pontus, where the plant grows in great abundance.

The whole of the genus aconitum possesses poisonous properties; and the species A. *ferox* is so powerful in its action that the plant is employed to poison large tanks of water, as an engine of war, by some of the Asiatic nations. My friend Dr. WALLICH's botanical knowledge saved a great part of the British army from falling victims to this diabolical mode of warfare, in our contest with the Burmese. The army of the Burmese had suddenly retreated, without any particular cause, and had left the British troops to take up their quarters in a very advantageous situation, well supplied with water in tanks. In these reservoirs, however, Dr. WALLICH perceived large quantities of the aconitum *ferox* deposited, and prevented the soldiers from using the water. Had the discovery not been made in time to prevent the water from being used, it would have, undoubtedly, proved fatal to many of our men, and have given to the Burmese an easy victory over the survivers.

The poisonous properties of aconite were so well known to the ancients, that the term

* Metamorph., b. vii., v. 411.
† Idyl. xii., v. 78.

aconite was employed as a general designation of poisons:

"——— nulla aconita bibuntur
Fictilibus." JUVENAL.

It was the juice of aconite which formed the poison-cup presented to old men in Ceos, when they were no longer useful to the state. According to THEOPHRASTUS, also, it was a chief ingredient in the slow poison of the ancients, which operated in a determinate time. It was even in latter times believed that simply handling the plant was dangerous. A young Swiss danced with his affianced a whole evening, holding a bunch of aconite flowers in his hand: both died at the termination of a few hours. But HALLER doubts this poisoning power of aconite by simple contact, as he affirms that he has seen the flocks reposing quietly in the Alps amidst tufts of aconite. When eaten, however, it is poisonous to many quadrupeds: its English name, wolfsbane, is explanatory of its known poisonous properties to wolves.

Some unjustifiable experiments were made with aconite upon condemned criminals at Prague by the order of the emperor FERDINAND the First; and also at Rome, by MATHIOLUS, acting under the authority of Pope CLEMENT the Seventh, in order to determine its poisonous properties on man, of which they left no doubt.

The aconites belong to the natural order *ranunculaceæ*; they are readily distinguished as plants by the petaloid character of the irregular calyx, which is formed of six unequal sepals, the superior and largest of which is in the shape of a helmet or a monkshood; thence another English appellation of the plant, namely, monkshood; the two lateral sepals are flat, and unequally rounded; the two inferior are small, oval, and entire. The corolla, also, is singular in its form, being composed of two petals, which are concealed under the hood of the calyx, and which have some resemblance to the ornament usually displayed on the crosiers of the Catholic bishops. The species are of various shades of blue and yellow, and some of them are nearly white.

The fresh plant, like most of the natural order to which it belongs, irritates and blisters the skin when rubbed upon it, and when a small portion of it is chewed it causes a sensation of burning heat and pain, which extends to the pharynx, and inflames the parts. This was experienced both by Sir BEN. BRODIE, by Dr. CHRISTISON, and by myself; and, in some of the cases on record, the earliest symptom is stated to be a tingling in the jaws, which extends over the body. Two or three drachms of the plant are sufficient to poison a strong man. WILLIS mentions a case which proved fatal, in which the chief symptom was maniacal delirium. MATHIOLUS, also, in recording the results of his experiments on condemned criminals who were to be pardoned if they survived, says, that one of them took ʒj. of the powdered root, and repeated the dose after an interval of an hour and a half. Three hours afterwards he became languid, and was attacked with fainting, vomiting, and convulsive movements of the eyes, the mouth, and the neck, symptoms which were followed by coma and death. Every part of the plant is poisonous, but the root possesses the greatest virulence. When the expressed juice of the recent plant is inspissated at a low temperature, the extract possesses the poisonous properties of the plant in an eminent degree; but the alcoholic resinous extract made from the dried plant is more poisonous than the aqueous extract made from the decoction of the dried plant. This is easily understood, as we know that the active principle is a resinoid which can be easily separated by alcohol. PALLAS mentions that five persons were killed by drinking a spirituous infusion of the plant, which they mistook for lovage: other cases of a similar kind are on record.

Aconitina.

Aconitina, the name of this resinoid, is in the form of granular crystals, inodorous, with a bitter taste, which, however, is supposed to depend on another salt with which it is, more or less, always combined, namely, *aucmenina*. Aconitina is soluble in 150 parts of cold, and 50 of boiling water; alcohol and æther dissolve it readily. It is decomposed by heat, which is the cause of the variable character of extracts of the plant prepared for medicinal use. It has an alkaline reaction, and forms salts with weak acids. In many of its properties it closely resembles delphia.

When aconite is taken internally it does not immediately display its poisonous powers. After an hour or more it causes a burning heat in the stomach, ascending to the fauces, thirst, swelling of the abdomen, vomiting, the most severe colic, with purging, vertigo, headach, a fixed stare of the eyes, a small quick pulse, hurried respiration, trembling, cold clammy perspiration, and death. These symptoms demonstrate, strikingly, both the acrimony and the narcotic power of the poison.

The post-mortem examination of the body displays redness of the stomach and of the small intestines; the gullet and the rectum also exhibit indications of inflammatory action; the lungs are gorged, as are also the cerebral vessels.

Little satisfactory can be said respecting the treatment of poisoning by aconite; and one of the greatest obstacles in the way of affording relief arises from the symptoms of poisoning not appearing until the digestion of the substance, and the absorption of the resinoid into the system. Still, however, from seeing the topical effect of the poison,

the necessity of clearing the stomach is evident. The after-treatment is indicated by the symptoms; topical bloodletting to subdue the inflammation, and the usual treatment of cases of narcotic poisoning afterwards, with a liberal use of acidulated demulcents. Opiate frictions have been found to prove beneficial.

The ancients regarded rue as the antidote of aconite. We are told that after the tyrant CLEARCHUS had poisoned many persons with it, the inabitants of Heracleum never went out of their houses without having eaten rue. Modern experience has not confirmed the virtues of rue.

SECALE CORNUTUM.

The secale *cornutum*, or ergot, is a parasitic plant, which is now known under the name acinula *clavis*. This plant, growing upon rye, and some other grains, produces a diseased condition of the grain, by which it is elongated to twice its ordinary length, is curved, somewhat angular, and of a dark violet-brown colour. Analysis has thrown no light upon the nature of ergot, and an obstacle stands in the way of a correct analysis of this substance, namely, the difficulty of separating it from the diseased grain.

Long before this diseased rye was employed as a medicinal agent, its deleterious agency had been severely felt, on more than one occasion, in the north of Europe, and in some of the French provinces where rye is very generally used in making bread. The most tremendous of the epidemics which it caused occurred in the north of Germany in 1770. The symptoms which characterised the disease produced by the use of the diseased rye, were cramps of the limbs, accompanied with excruciating pains and formication; the thorax, also, suffered from pain, convulsions supervened, and an eruption of livid spots broke out over the body. These symptoms were intermitted. In the intervals, the pulse was natural, the appetite voracious, and the excretions regular. In some other instances in which the disease was also epidemic the symptoms were those of extreme debility, numbness (occasionally of complete insensibility) of the extremities, gangrene of the toes and legs, and dropping off of the joints, the cases terminating either in death or fatuity. In these cases it affected equally quadrupeds and man. It is remarkable, however, that those animals on whom poisons usually operate nearly in the same manner as upon man, namely, dogs and cats, suffer least from the influence of ergot.

The symptoms produced by ergot, when it has been overdosed, and not baked in bread, are flushing of the face, vertigo, violent headach, pain and cramp of the stomach; nausea, vomiting, purging, and a sensation of extreme languor.

I need not inform you that the ergot is now much used in promoting the action of the uterus in parturition; and, as it has been erroneously supposed to operate in causing uterine action, it has been employed in every period of pregnancy to produce criminal abortion, and has caused poisonous symptoms, in these cases, of the most alarming kind, which, in some instances, have terminated fatally. In a case to which I was called, where the object was to expel a blighted fœtus, fever was induced, with flushed face, a rending sensation of the head, and the other symptoms which I have described as characterising its poisonous influence. The means taken to relieve this patient were topical bloodletting, purging, and saline medicines; but, although this case recovered, yet, as I have seen no other instance of poisoning by the ergot, I cannot affirm that such a plan of treatment is the best adapted to save a patient who has been poisoned by ergot.

NUX VOMICA.

NUX *vomica* is the seed of a species of strychnos. In common with the greater number of the species of the genus, it possesses powerful acro-narcotic properties, which depend on two alkaloids, easily separated, namely, strychnia and brucine. The seed of the strychnos, *nux vomica*, is round and flat, slightly convex upon one side and concave on the other, nearly an inch in diameter, and about three-tenths of an inch thick. It is of a greyish colour, and covered with a short, silky down. The interior of the seed, which is a dicotyledon, is of a horny consistence, white, semitransparent, or nearly so, acrid, and very bitter to the taste, with an odour not unlike that of liquorice. Nitric acid colours it orange yellow; and the same colour, but redder, is communicated by the powder of the nux vomica soaked in alcohol.

Some animals, hogs and goats for example, feed on nux vomica with impunity. It has also very little influence on poultry. M. DESPARTES fed a hen with it until gr. 60 were taken for a dose, yet no bad effects resulted; but when the dose was extended to 120 grains, it caused rigidity of the limbs, purging, and great distention of the crop, but still the fowl survived. On the twentieth day of the experiment gr. iv. of the extract were given, and in three hours afterwards gr. 160 of the powdered seed: the animal died in a state of tetanic rigidity. Many animals, on the contrary, are rapidly poisoned by nux vomica; rats, cats, foxes, and dogs suffer. When dogs swallow from gr. xx. to gr. xxx. of the powder, they are quickly attacked with all the symptoms of tetanus, namely, twitchings, and sudden extension of the limbs,—tremors, convulsive movements of the face and eyelids; fixedness of the eyes; spastic rigidity of all the

muscles, and involuntary emission of urine. While life continues these symptoms reoccur on the slightest touch, or even noise; nevertheless, the mind, if I may so express myself, seems to remain entire to the last. The same effects occur if the extract be applied to a wound, or a solution of it injected into the pleura. Dr. CHRISTISON says, "I have seen a dog die in two minutes after the injection of 1-6th of a grain into the pleura." It produces no effect when it is applied to the sound skin. M. DELILE wounded a dog in the thigh with a piece of wood smeared with the extract of nux vomica; the quantity of the extract was only gr. jss., yet it caused tetanic convulsions, and proved fatal in five minutes after the first paroxysm.

The influence of nux vomica is equally severe on man. It has too often been used as a poisonous agent by the suicide, of which many cases might be cited, but I shall refer to two only, because they are well authenticated, and the symptoms which attended them were well marked.

The first is one detailed by Mr. OLLIER, surgeon to the Western Dispensary.* An hour had passed before Mr. O. saw the woman; he found her sitting at the fire undisturbed, the pulse at 80, and regular. She had taken half an ounce of the poison: in about ten minutes after the time Mr. O. saw her she was still quite free from pain, but she seemed alarmed. "She had thrown herself back in her chair, and her legs were extended and considerably separated. She requested the landlord of the house, who at that moment came into the room, to leave it immediately. A perspiration had broken out on her skin, her pulse had become faint and quick, and she called frequently for drink. I mixed two drachms of pulvis ipecacuanhæ in a tea-cupful of warm water, of which I gave her about one-fourth every five minutes, and of which I got down four doses, the last with great difficulty. She had, also, warm water at intervals, to still her repeated calls for drink; but of this she was not permitted to swallow much, nor indeed did she seem inclined to do so when it was at her lips.

"Before I was prepared," says Mr. OLLIER, "to give her the first dose of her medicine, she had a slight and transient convulsion. On recovering from it she was in great trepidation, kept fast hold of her husband, and refused to let him go, even for the alleged purpose of getting her drink. In a few minutes afterwards she had another and more violent attack, and shortly afterwards another. I should estimate the duration of these fits at from a minute and a half to two minutes. In them she retained her grasp; her whole body was straightened and stiffened; the legs pushed out and forced wide apart. I could not perceive either pulse or respiration; the face and hands were livid, the muscles of the former, especially of the lips, violently agitated, and she made constantly a moaning, chattering noise. I thought she was not unlike one in an epileptic fit, but that she did not struggle, though she was forced straight out: it became difficult to keep her from falling on the floor.

"In the short intervals of these attacks she was quite sensible, was tormented with incessant thirst, perspired, had a quick and faint pulse, complained of being very sick, made many attempts to vomit, and, when requested, put her finger into her throat with a view of exciting it. To the question whether she was in pain? she replied, 'No, no, no.'

"A fourth and more vehement attack soon followed, in which the whole body was extended to the utmost: she was rigidly stiff from head to foot, insomuch that, with all the force I could exert, I could not bend the pelvis on the thighs to replace her in her seat. From this time she never recovered, but fell into a state of asphyxia, and never breathed again. She now loosened her grasp; her discoloured hands dropped upon her knees; her face, too, was livid; the brows contracted; the lips wide apart, showing the whole of the closed teeth, and a salivary foam issued plentifully from the corners of her mouth. The expression of the whole countenance was at this moment frightful. In lifting her up to lay her in bed we discovered that the urine had been discharged. This took place in little more than half an hour after I first saw her, about a quarter before three in the morning.

"At about eight o'clock, when I saw her again, she was still as straight and stiff as a statue. If you lifted one of her hands the whole body moved with it, but the face had become pale in comparison, and its expression more placid. The side which lay next the bed was not yet cold; she had not, however, been then undressed."

In another case, recorded by Dr. TACHERON, of Paris, which recovered, the intellectual faculties appeared to be a little troubled, and the woman wept occasionally, and on the second day she experienced a loss of sight for two hours. The thirst in this case, also, was very urgent.

From the consideration of these, and other cases on record the following may be stated as the *symptoms of poisoning by nux vomica*:—

1. A feeling of dread suddenly coming on about half an hour or an hour after the dose of the poison has been taken; tremor, followed by stupor, and a sensation of intoxication, quickly followed by general symptoms of tetanus, namely, violent twitchings

* Med. Rep. vol. xix., p. 448.

in the legs and the arms, stiffness of the muscles of the neck, trismus, severe pain under the ensiform cartilage, laborious breathing.

2. The *pulse* is, at first, full and hard, but not much accelerated; by degrees it becomes quick and feeble. These symptoms recur at intervals, during which the sensibility of the body is so great that the motion of the air becomes a source of uneasiness, and the smallest touch renews the tetanic convulsions. In these intervals the mind is perfectly entire; but sometimes there is much confusion of thought, and some degree of delirium, a circumstance which distinguishes poisoning by nux vomica from poisoning by strychnia, which is its active principle, in a separate state. Copious sweating often attends these intervals.

3. The paroxysms increase in force, and recur at shorter intervals; the spastic rigidity increases; occasionally opisthotonos displays itself, and death takes place in the paroxysm. The cause of death is evidently the prolonged spastic striction of the thoracic muscles of respiration: the diaphragm is, also, in the same state; hence it is impossible for the function of respiration to proceed, and the animal dies from suffocation.

During the paroxysm the muscles of the chest seem as hard as a stone, and the body retains, for many hours, the rigid state in which death took place.

In the *post-mortem examination* of the body, the stomach occasionally, but not always, displays symptoms of inflammation having been produced. In a case detailed in HUFELAND'S Journal this was very striking, but in Mr. OLLIER'S case, and in all the instances of dogs that have been poisoned with it, which I have examined, there was no redness of the stomach, nor of any portion of the intestinal canal.

The lungs are generally gorged with black blood, and black fluid blood is found in the arterial cavities of the heart.

The vessels of the brain are usually congested. In a case related by ORFILA and OLLIVIER, there was serous effusion on the surface of the cerebellum, and a general softening of its cortical part; indeed, from the effects of the poison, we are prepared to find that the cerebellum is affected.

One appearance is invariably present, viz., a general contraction of the whole arterial system, and a consequent gorged condition of the veins. I have often seen the aorta in dogs reduced to the size of a crow-quill.

There is a diversity of opinion respecting the manner in which nux vomica operates, but there can be no doubt that its influence is exerted powerfully on the motor tract of the spinal chord: the great sensibility, however, of surface demonstrates that the nerves of sensation are also influenced.

From the time which passes between taking the poison, and its effects displaying themselves, it is supposed that absorption takes place, and that the active principle is conveyed to the spinal chord; but, although this appears very plausible, yet it is by no means demonstrated. Thus, in the first place, the nux vomica must undergo digestion before the active principle, the strychnia, can be sufficiently separated to affect the nerves of the stomach: on the other hand, when strychnia alone is given, some time also elapses before it begins to operate. It must, however, be recollected, that strychnia is of very difficult solution, and requires the aid of an acid. When it is given in combination with an acid, the effect is very rapid. In one case, in which an overdose of the acetate of strychnia was administered, a few seconds only intervened between taking the poison and the appearance of its effects. Again, when the influence of the poison has already displayed itself, an emetic will arrest the progress of the symptoms, which would not be the case had absorption taken place, and did the spmptoms wholly depend on the application of the active principle to the spinal nerves. From these facts, and from its influence on reptiles, when it is introduced into wounds, I am induced to believe that it acts independently of absorption.

My opinion of its acting purely through the nerves is further confirmed by the fact, that many agents employed in medicine have their influence directed to different parts of the system, and act on these independently of absorption; thus, a poultice of rhubarb purges, although no absorption takes place.

The spinal column is the site of the irritative influence of nux vomica; if a portion of the column be removed, no effect follows the administration or the application of either nux vomica or of strychnia; and FODERE found that when the spinal chord is exposed in an animal to whom strychnia is given, the convulsions can be arrested by pressure on the anterior segment of the chord.

The correctness of this opinion is not a matter of mere physiological speculation, but of practical importance; for, if we can ascertain that no absorption takes place, our endeavours to remove the poison, or to neutralise and destroy its energy, should not be limited to any period of its operation.

Strychnia and Brucia.—St. Ignatius' Bean.

I have already stated that nux vomica owes its poisonous properties to the alkaline substances, namely, strychnia and brucia, which are generally found mixed together in the usual specimens of strychnia.

Strychnia is, when pure, colourless, inodorous, and crystallised in four-sided prisms, terminated by a pyramid. It is so intensely

bitter as to communicate bitterness to 600,000 times its weight of water. It requires 6000 parts of water at 60°, and 2500 at 212°, for its solution. It is insoluble in absolute alcohol and in æther, but it dissolves in diluted alcohol. It has an alkaline reaction, and neutralises acids. It is a compound of carbon, hydrogen, oxygen, and nitrogen. I am not aware of any chemical test for it, in its pure state, except that it imparts a red-wine colour to iodic acid, yet iodine is not set free.

Brucia is less crystallisable than strychnia. It is more soluble in water, requiring only 850 parts at 60°, and 500 at 212°, for its solution. With nitric acid it acquires a blood-red colour, which passes into yellow; and the addition of protochloride of tin produces a beautiful violet tint.

Both of these alkaloids operate in the same manner as nux vomica, but the strychnia with much more violence, and its influence on the surface is more striking. This was well illustrated in some experiments which I made with it upon a snake, and some other reptiles.*

In cases of poisoning by nux vomica, when the object is suicide, it is generally taken in the state of powder, with the appearance of which we should be acquainted; the taste is bitter, and it acquires an orange-red colour, with nitric acid.

The effects of these re-agents are the same in the decoction, which is intensely bitter. Infusion of galls precipitates it grayish. Ammoniacal sulphate of copper gives the decoction a green colour. The orange-red produced by nitric acid is owing to the brucia contained in conjunction with the strychnia in the nux vomica: the green colour is owing to the igasuric acid, which is combined with the brucia and the strychnia to render them soluble.

The same result as with ammoniacal sulphate of copper, takes place with infusion of arnica *montanum*, an overdose of which causes symptoms closely resembling those of nux vomica; and although nitric acid causes no reddening in the infusion, yet this is no proof that it does not contain strychnia, as this alkaloid, when pure, causes no redness with nitric acid.

Before proceeding to notice the treatment, let us examine the other substances which produce poisoning in the same manner as nux vomica, and evidently from the same cause.

The first of these is the St. Ignatius' *bean*, the seed of the strychnia *sancti Ignatii*. Nitric acid acts on the powder of this seed more powerfully than on that of nux vomica, as it contains more brucia than nux vomica. It is, also, more energetic in its action on the animal economy than nux vomica. The only case of human poisoning by it that I am aware of is one quoted in Christison's work, detailed by Dr. Hoff. Half a bean was taken in brandy; tetanic symptoms followed, but the man recovered.

* Elements of Mat. Med., &c. p. 180, note.

LECTURES
ON
MATERIA MEDICA AND THERAPEUTICS,
NOW IN COURSE OF DELIVERY
AT THE
WINDMILL-STREET SCHOOL OF MEDICINE.
BY
GEORGE G. SIGMOND, M.D.

Lecture XXVIII.

Nux Vomica (concluded):—*Its action on the nervous system. The functions of that system. The therapeutic measures which they indicate. Influence of nux vomica on the anterior spinal nerves. Its effect on a dog. Intoxication from it. Its effect on cases of paralysis. Electric state induced by it. Preparation of the alcoholic extract and the tincture. Best form for its administration. Objections to the use of strychnia. Its mere effluvium poisonous. Alleged antidotes. Its trial in hydrophobia. Employment of nux vomica in Paris. Diseases in which it has succeeded. Cases in which its use would be injudicious. Incontinence of urine in children. Prolapsus of the mucous membrane of the rectum. Use of nux vomica as a febrifuge. Physicians who recommend nux vomica. Enormous doses used. Probable impurity of the drug. Poisoning by overdoses. Use of eau de Cologne as an antidote. Test for the purity of strychnia.*

Gentlemen:—The narcotics which have been the subject of my previous lectures almost entirely exert their agency upon the brain, and the nervous system which is dependant on it. This is proved by their effects upon the mental powers; but the therapeutic agents which are to be found in the strychnine family are more particularly distinguished by their influence upon the medullary chord. I cannot, of course, enter much on the subject of the views entertained by the greatest physiologists of our time relative to the nervous system; but, in order that you should fully understand the mode of action of the nux vomica, and of the alkali which is obtained from it, from the bean of St. Ignatius, from the upas tieuté, and from other vegetables of the same class, I must make some observations

on certain of the results of the experiments which they have instituted, and have led to such important discoveries, and which must, also, gradually give us more certain indications in our use of therapeutic agents, when treating diseases which are dependant on the cerebro-spinal system.

It is now very generally admitted that the brain, and its more immediate appendages, are destined for the performance of the mental functions, whilst the spinal marrow presides over motion and sensation. This opinion seems to have been entertained amongst the ancients: by ALEXANDER TRALLIAN, and by GALEN; indeed the latter says, "We learn, in dissections, that all the parts of an animal below the neck, which are moved voluntarily, have the nerves moving them from what is called the spinal marrow. You have also seen," he continues, "in dissections, that the nerves moving the thorax arise from that part of the spinal marrow which is in the neck." He relates a case which occurred to him, and upon it founds his advice to his pupils, in the treatment of partial paralysis, to ascertain the primary seat of the derangements of the nervous function. PAUSANIAS, a sophist, on his arrival in the Eternal City, found that sensation was very much diminished in the two smaller fingers, and partially in the third. From injudicious treatment on the part of the medical advisers whose opinion he followed, he gradually lost all sensation in them. GALEN was then consulted: his inquiries led him to ascertain that PAUSANIAS, on his journey to Rome, had been thrown out of his carriage; that he had fallen upon his back, and that he had suffered some short time from a slight injury inflicted on his back, but from which he had entirely recovered. The physicians to whom he had first applied, in consequence of the paralysis of the fingers, had solely directed their medicines to the local affection, and applied them to the fingers; but GALEN immediately gave his attention to the spine, which had been the first seat of mischief, and he concludes by stating, that his patient was quickly cured.

The distinguished physiologists who, since the days of HALLER, may be said first to have recalled our attention to the investigation of the nervous system, have, with much diligence, performed a variety of interesting experiments on the subject, and have offered to our consideration many most ingenious conjectures respecting the uses of its various parts. To LE GALLOIS, BICHAT, MAGENDIE; to Sir CHARLES BELL, Sir BENJAMIN BRODIE, and Dr. WILSON PHILLIP, does the profession owe a debt of gratitude for the elucidation of many most important points which have been illustrated by a series of experiments, both accurate and conclusive. It is true that some of these, such as the one performed by LE GALLOIS, are shocking, and have excited much feeling against their repetition, so that physiologists, in this country at least, have not the same opportunity of prosecuting their inquiries, and, indeed, the "Edinburgh Review, when examining BRODIE's experiments on vegetable poisons, thus expresses the opinions of the non-medical public:—"Some object of a practical nature, some prospect of discoveries likely to benefit mankind more than by the mere gratification of a learned curiosity, however natural, or even laudable, is almost requisite in order completely to justify the expense of animal life, and the large amount of torment as well as death which such investigations demand." The experiment of LE GALLOIS, shocking, however, even in its narration, proved that sensation and motion belonged essentially to the trunk. It demonstrated, that if an animal be decapitated,—if the breast and the abdomen be opened, if the heart, the lungs, the diaphragm, and every internal organ be torn from its natural seat, and nothing be left but the skeleton, with its muscles, veins, arteries, fat, and skin attached to it, provided the spinal marrow be left uninjured, life will still be carried on; if, on the other hand, the spinal marrow be destroyed, life will cease; or, if it be partially injured, some portion of the body will likewise be injured, and its sensation impaired.

The next important portion of knowledge for you to treasure up is, that which we derive from that illustrious leader in the paths of science, (and I know no one who better deserves the epithet,) Sir CHARLES BELL, that the spinal nerves have two roots, and that they perform distinct functions. He found that on an animal being killed by a stroke behind the ear, and the spine being immediately opened, the tearing of the posterior roots of the nerves produced no effect upon the muscular system; but that on touching the anterior nerves, the muscles were convulsed; on touching the threads which composed them, the muscles vibrated in a manner as distinct as the chords of a harpsichord when the keys are touched. The important result was that nerves had, in their composition, filaments from different roots possessing different powers. This discovery led him to the conclusion, that the anterior root of the nerve was the nerve of motion, and the natural inference that the anterior column was the column of motion, and that all the nerves that issued from that column must be muscular nerves. Various experiments then led to the confirmation of what his reasoning had told him, that the posterior roots of the spinal nerves were destined for sensation.

MAGENDIE's experiments confirm those of Sir CHARLES BELL, so that we have arrived at certain truths; and however much opi-

nions, founded upon them, be modified, and whatever doubts on various points may have arisen, we must draw the conclusion that we have attained some knowledge of the functions of various parts of the nervous system, from which we can deduce certain inferences as to diseased and disordered states of the system, and as to the particular seat of those states, to which we are to direct appropriate remedies.

Nux vomica, and its alkali, appear most extraordinarily to influence the spinal nerves, and I think we have every reason to believe, from their effects both in health and in disease, that their power is principally, although not entirely, exercised over the anterior column of the medullary spine, and that they call into action the nerves of motion. The result of experiments made by ORFILA, on a dog of middle size, is quite characteristic of the effect of nux vomica. It was made to swallow somewhat less than half a drachm. Three quarters of an hour after, the animal had convulsive movements in the posterior limbs, which were separated from one another and pushed forward, so that the dog rested upon his heels. All at once he rose up, stretched out strongly his limbs, and separated them. He made several bounds, as if all of one piece; the neck and back were in a state of tetanic stiffness, and were curved backwards; the tail was brought under the belly; he fell down again afterwards on the feet, touching the ground only with the extremity of his toes. A short time after, he fell on the side, trembling, and the tail extended straight; at last all the muscles became relaxed. The animal had a second attack, which began by convulsive movements of the face, mobility of the eyelids, whilst the eyes, which were immoveable from the tetanic contraction of the muscles, were starting out of their sockets. Shortly afterwards general tetanic stiffness came on; he might be raised up all in one piece; there was again general trembling; the tongue was protruded out of the mouth; it was of a violet colour, as well as the lips; the respiration was suspended by the tetanic contractions of the muscles of the thorax; general relaxation then occurred. In the attack which preceded death, respiration was carried on during the paroxysm, and then the tongue and lips returned to their natural colour. He expired at the fifteenth attack, twenty-eight minutes after the coming on of the symptoms, and preserved all along the use of his senses.

In all the cases of poisoning by such means, agitation, trembling of the limbs, stiffness, and complete immobility, are the first symptoms; after which, violent general spasm, during which the head is bent back, the spine is stiffened, the limbs are extended and rigid, and the thorax is quite immoveable; the brain appears rarely to be excited, though MASON GOOD speaks of a case in which drunkenness, or, as he terms it, "temulency," was brought on by the medicinal employment of nux vomica, which he states often occurs, but which, from other cases, appears very rare.

Given in the form of powder, commencing with four grains, or as an alcoholic extract, two grains, three or four times a day, nux vomica produces a most marked influence upon paralysis in its very worst forms. Scarcely has half an hour elapsed after its administration, before you will observe contractions and spasmodic action take place in parts which have before lost all muscular power; but that which excites still more surprise is, that the limbs which have not become paralysed, which retain their usual tone and strength, appear in no way acted on by the new stimulus, which solely confines its energy to the disordered parts. These are the seat of recovered sensibility, which exhibits itself slightly in comparison with the increased motion, for whilst there is only a prickly sensation induced, tetanic shocks are observed. In hemiplegia this is singularly evinced, one side of the body appears almost as tranquil as if it were paralysed; it is, however, obedient to the will, and enjoys its wonted sensation, whilst the actually paralysed side exhibits signs of the strongest agitation, the spasmodic actions succeed each other with extraordinary rapidity, and abundant perspiration bursts forth; if the dose, however, be increased to any great extent, both sides are similarly affected, and violent tetanic shocks are perceptible. It has been said that a person who is under the influence of the nux vomica, if touched, conveys to the person touching him a shock. That an animal touched whilst under its action conveys a sensation similar to a strong electric shock, we learn from the French toxicologists. Sometimes a peculiar eruption bursts out upon the disordered side of the body, and sometimes one side of the tongue has been sensible of a bitter taste, of which the other side is unconscious. Sometimes the shocks have been so severe as to throw the patient out of bed.

These results are more striking if the alcoholic extract be employed, but it has not its effects so speedily produced as when the powder has been given, for, occasionally, some days pass without its perceptible influence. In experiments with the alcoholic extract upon animals, we have further proof of the influence of this agent upon the spinal marrow, for it has been observed that on decapitation, or on dividing the spinal marrow near the occiput, the spasms still proceed. MAGENDIE'S preparation is thus to be made:—Treat a given quantity of rasped nux vomica with alcohol of 40° by the dèromèter of BAUME, 817, and at the lowest possible temperature let it be re-

newed until nothing further is taken up from the rasping; then evaporate gently to the consistence of an extract. The activity of the matter obtained will be in proportion to the strength of the alcohol. The alcoholic extract may be obtained dry by filtering a saturated tincture, and evaporating in the common way. A tincture is also made according to his recipè. Take of alcohol of 36°, .837, one ounce of France, which is equivalent to seven drachms, fifty-two and a half grains, troy; dry extract of nux vomica, three grains, French, which are about two and a half grains troy, and dissolve.

The best form is that of pills of the extract, each containing one grain, and one or two may be commenced with, and it is recommended that the dose should be administered in the evening, for the phenomena consequent upon its action are more perceptible during the night. From four to six grains of this extract have very quickly produced the effect, but this dose has been sometimes increased until thirty, or even forty, grains have been taken during the day. Of the tincture six or eight drops have been generally commenced with, in any fluid. Its action is always to be watched very narrowly, and when any of the symptoms attendant upon it are exhibited, it should for a time be discontinued, in order to give the system time to prepare itself for a second administration, which should be commenced from the small dose first given, and not from that which had begun to exert its agency upon the cerebro-spinal system. If it be persevered in when the shocks are exhibited, one or two more doses will throw the muscular system into most frightful action, and fatal consequences may arise.

If the preparations of nux vomica were at all times of uniform strength, there would be no necessity for the employment of strychnia, which is the most ferocious poison we possess, and which, I think, ought never to be prescribed. It is the most insidious and the most destructive agent we know, and though such authorities as Magendie, as Cramer, of Bonn, as Dieffenbach, as Cassalis, as Dr. Bardsley, have given it a sanction, still it is to be, in my opinion, shunned by the practitioner. If out of a vast number of successful cases there be but few fatal ones, as we do not possess any means of ascertaining what are the indications that forbid its use, it ought not to be employed, excepting in such cases of utter hopelessness that any remedy may be had recourse to from which there is a promise held forth of relief. It is true that I have seen others employ it successfully, and have administered it with a happy event in several cases, but I have upon my mind certain convictions that it has suddenly extinguished life, and in this opinion I am borne out by a discussion that took place on one occasion at the *Medico-Botanical Society*, in which Mr. Guthrie, Dr. James Johnson, and other distinguished professional men took a share, when the general opinion was most decidedly against the use of this energetic remedy, excepting under very urgent circumstances. Such cases as that which occured to Magendie were narrated. I have mentioned one in my dissertation on endermic medication, but I think that as it should be impressed on your minds I may here repeat it. A curate, who had been in the habit of using strychnine, presented a scarcely appreciable morsel to a denuded surface, and was instantly killed. Where it has been thus employed for the cure of amaurosis a similar result has taken place. It is true that cures have been produced, and that many men for whom we all entertain the highest respect, are sanguine as to its effects, but if the sixth of a grain applied to a blistered surface produced in a patient of Lesieur, labouring under paraplegia, a paroxysm of tetanus, you may judge of the activity of this energetic remedy. Christison killed a dog in two minutes with the sixth part of a grain injected in the form of alcoholic solution into the chest; he has seen a wild boar killed in the same manner with a third of a grain in ten minutes.

I was not aware that its effluvium produced any effect until I learnt from my friend, Mr. Moore of Mitcham, whom I have had occasion to mention to you, as one of the first medical planters in this country, that a favourite dog having the day previously been bit by a rabid dog, he was determined to destroy him, and having purchased some strychnia at the Apothecaries' Hall, and infused it in milk, he shut the dog into an apartment in which the vessel containing it was placed. In a short time the animal was found stretched out in his usual position of slumbering, perfectly dead, the limbs quite rigid, and without the slightest appearance of convulsions. Not a single drop of the fluid had been swallowed.

A great objection to the use of strychnia is, that we are not acquainted with the means by which any fatal consequences which follow upon its undue administration might be prevented. M. Donne, of Paris, thinks that he has discovered in iodine, bromine, and chlorine, antidotes, but if ten minutes elapse before these be made use of, he holds forth no hope of recovery. It is sudden and unexpected death which, I think, is consequent upon the attempt by strychnia to afford remedial assistance, and we are so apt to ascribe this to the paralysis that we do not sufficiently examine into the treatment we have followed, but when the suspicion was once awakened, many circumstances tended to lead me to inquire from others their practical experience, and although there are very few men who will allow, even to themselves, that they have been inadvertently the cause of mischief,

yet I have met with men who were candid enough to confirm the views which I entertain. I regret to be obliged to abandon the remedy, because I have witnessed such extraordinarily good results from its use. I had some cases at the *Charing Cross Hospital*, previous to my more matured judgment on this subject, in which the most convincing proofs were afforded me of its singular efficacy. Even in early childhood, when paralysis is very difficult to be relieved or cured, I have tried strychnia with the best possible results. In that institution this remedy was, on one occasion, employed in a case of hydrophobia, but it produced not the slightest beneficial effects; the individual laboured under spasmodic affections during the time I saw him, but whether these were the ordinary consequences of the miserable disease, or were in any degree aggravated by the remedy, I will not pretend to say; they were, however, of a very severe character. Mr. DAVEY, of Portsea, has likewise treated a case unsuccessfully with strychnia; the narrative appears in a recent number of THE LANCET, with some sensible observations on its use.

It is to Dr. FOUQUIER that we are principally indebted for the introduction into practice of nux vomica. He gave to the profession the result of some extensive experience at the *Hopital de la Charité* in paralysis, and M. HUSSON likewise published the success of his trials. In the "Journal Universel des Sciences Medicales," there were cases by LESCURE and FINOT. M. BRICHETEAU, likewise, drew up a number of cases treated at the *Hotel Dieu*. In some instances, forty, fifty, and sixty grains were taken in the day. One individual, a shoemaker, fell down in his room senseless; he recovered in about two hours from this state, but was paralytic on the left side, venæsection and blistering were fruitlessly tried; he then began the powder of nux vomica in doses of two grains, which were carefully increased to twenty grains, when the relief was astonishing; in six weeks he was almost entirely restored. During several days half a drachm of the powder was employed as an enema, but the most alarming convulsions were brought on. Dr. MOULSON, of Halifax, narrated, about the same time, his success in a case of loss of power over the voluntary muscles. Dr. DICKSON, of Clifton, Mr. ROSE, of Swaffham, in Norfolk, and Mr. PURCELL, also tried it with general good effect. Dr. MASON GOOD states that he tried it in various instances, but had never been able, from its tendency to temulency, to proceed much more than half as far as some practitioners have gone, who have gradually advanced it from four grains of the powder to twenty-four, three or four times a day. He relates a case in which he commenced with two grains alone of the powder, given three times a day, as there was a hemiplegia following upon a second fit of atonic apoplexy, with a general debility, both of the mental and the corporeal powers, the patient being at that time upwards of sixty years of age. The dose occasioned no manifest effect, and on the third day it was gradually increased to six grains. It now produced a powerful sense of intoxication, but with clonic agitation instead of a tetanic spasm of the paralysed leg and arm, and great heat down the whole of the affected side. The powder was continued in this proportion for three or four days, but the stupor and vertigo were so considerable and afflicting that the patient could not be persuaded to proceed with it any longer, and it was accordingly suspended for a few days. He recommenced it at his own desire; the dose was gradually raised from four to six grains three times a day, the same clonic effect, but no intoxication, was produced. On eight grains having been given, the head became again affected, but without any permanent return of muscular power or sensation in the palsied limbs, or any other effect than a few occasional twitches and involuntary motions, and the medicine was abandoned. In about three months the patient fell a sacrifice to a third apoplectic attack, apparently of a much slighter kind.

Dr. GRANVILLE, in a letter from the Continent, to the editors of the "London Medical Repository," states that Professor DUMERIL had occasion to administer the remedy to a woman aged about forty, who had completely lost the use of the lower extremities; the effects were most satisfactory; the patient was enabled to get out of her bed without assistance, and also to stand on her legs some time without tottering; he gave her five grains of the alcoholic extract, which seemed to excite so much internal sensation, particularly by promoting a considerable sensation of heat in the spine, that the patient requested that the dose might not be increased further. Dr. GRANVILLE, however, adds, "I must not conceal that a similar experiment, tried on the relative of an eminent chemist, my intimate friend, even for a long period, has completely failed."

Dr. COKE, in his valuable treatise on nervous disease, has given a short abstract of several cases which had occurred since Dr. FOUQUIER'S publication, recommending the employment of nux vomica in palsy; he does not, however, give us the result of any experience gained by himself; he contents himself with stating that the nux vomica "a good deal resembles the rhus toxicodendron in its effect on the constitution; that in small quantities it may be taken in palsy with safety and advantage." The influence, however, of the rhus toxicodendron differs in some essential points; it has certainly the effect of producing twitching, convul-

sive motion, tingling and pricking in the paralytic part. The cases related by Dr. ALDERSON of the effect of this medicine are most important, and its influence seems in some instances to be remarkable rather on the posterior column, than the anterior column of the spine, for sensation rather than motion is affected upon its employment in palsy.

The cases in which it appears to be injudicious to administer nux vomica, are those in which the paralytic affection has been immediately subsequent to an apoplectic attack; nor is it to be used when there is organic lesion of the brain. Where there does not appear to be much vis vitæ remaining, marked by general feebleness and great exhaustion, it does more injury than good; sometimes for the first few days it produces such an amelioration as to excite the most sanguine expectations of its complete success; but then there is no further amendment, the case remains quite stationary, and if the dose be increased, so far from beneficial effects arising from it, convulsions and an increase of the paralysis have been observed. In cases of paralysis which have been the result of the action of lead, it has been very successful, and in some instances in which the disease had been preceded by rheumatic affections. But not only in general debility, but in local affections, and when there is occasional loss of muscular power, it may be given with advantage. In incontinence of urine dependant upon a loss of power of the sphincter muscle, or where it is easily stimulated by the urinary fluid, so that the contents of the bladder are involuntarily discharged, you will find it most efficacious. That nocturnal incontinence of urine which is so often a source of annoyance and distress to the parents of young children, and which sometimes continues to the age of puberty, is very often entirely removed by this remedy, when the causes are duly understood.

This last-mentioned affliction has not very often been the subject of observation amongst writers in this country, and those who have incidentally mentioned it have merely recommended cold bathing, cupping on the loins, blistering. Derangement of the digestive organs has been assigned as the cause, and then purgatives have been recommended. Sometimes, however, it is dependant upon an irritable state of the lining membrane of the bladder and of the urethra, in which states opium, or hyoscyamus, united with uva ursi, acts like a charm; when, however, it is dependant on muscular debility, nux vomica will be found very speedily to obviate the complaint. It has been said that this incontinence is confined to boys, but that is by no means the case, as you will find by a reference to the French authors, who have much more unrestrainedly given us their opinions and their practice in such instances. In the "Archives Generales de Medicine," you will find some cases by M. MONDIERE, related in a paper entitled "Practical Observations on Incontinence of Urine;" you will thence learn that great dependance may be placed on nux vomica, and that you have every reason to expect the best results in your treatment of this malady by such a remedy. He gives us, amongst other instances, the case of a female, twenty years of age, who had from the period she was six years old been subject to this weakness. She was cured thoroughly by persevering for twelve successive nights in taking eight grains of an extract, together with a drachm of oxide of iron.

M. CHAUFFART, in the "Journal Generale de Medicine," has reported the cure of a palsied rectum. In prolapsus ani it has been also most efficacious. In HUFELAND'S Journal we have had given to us the practice and the opinions of Dr. SCHWARTZ on this subject; he considers it to be a decided specific, but the theory of its action does not appear to be quite so satisfactory, for it is now generally believed that it prolapse not, as was formerly imagined, the consequence of the relaxation of the sphincter muscle, and that it is very rarely connected with any degree of paralysis, but that it is only the internal membrane of the intestine which descends through the sphincter muscle, and that this must arise from a want of a proper adhesion. So satisfied was Mr. HEY of this, that he proposed the removal of the pendulous flap, and the consequent production of such an inflammation as would produce adhesion of the rectum to the surrounding cellular tissue. This certainly may be very advantageous in disease of long standing, but when the prolapsus has lately occurred, nux vomica produces the most decided benefit. SCHWARTZ speaks of this remedy as infallible, and more particularly for young children, some of whom, he observes, appear particularly liable to this local malady. He employs one or two grains of an extract in two drachms of distilled water, and of this mixture he administers from six to ten drops every four hours, and he confidently asserts that on the following day the disease is perfectly cured.

In weakness of the genital organs it has also been recommended, and in that debilitated state of the nervous system which is more particularly indicated by an irresistible desire to fall asleep It has been given with advantage in chorea sancti viti, and likewise for the destruction of intestinal worms, which it is supposed to effect by its extreme bitterness.

At a much earlier period nux vomica had great reputation in the cure of intermittent fever, and this it gained from the recommendation of a shoemaker, who, despising the vulgar adage, "Ne sutor ultra crepi-

dam," chose to follow the lucrative avocation of a quack. He was successful in relieving several cases of tertian, and this led the way in Germany to its being employed, and it has reserved its station amongst some of the old remedies of different Pharmacopœias as a febrifuge; indeed, it has been confidently asserted that a small quantity mixed with gentian is quite as valuable as cinchona.

In Sweden it has for some time been a very favourite remedy for the cure of dysentery; and the well-authenticated details given to us by HARTMANN, HAGSTROM, and ODHELIUS, fully justify the treatment pursued by the faculty at Stockholm. There are various statements made, too, of its cure of inveterate diseases of the skin, after every other remedy had failed. In amaurosis it has been found successful, and very highly praised. In administering on any occasion this remedy, you must be very much upon your guard: when there is a sense of heat, of anxiety, you must be more than usually attentive, but sometimes the bad symptoms have come on without any premonitory inconvenience; there have been at once delirium, and general tetanus, with complete or partial loss of the power of utterance, and likewise of deglutition; the respiration has been rendered of extreme difficulty, and palpitation of the heart, and dysuria, have been amongst the most urgent symptoms.

Notwithstanding what I have stated to you of the bad effects which I have every reason to believe strychnia will produce, it is right that you should know that some most eminent men have derived from its use the greatest service in their practice, and place the firmest reliance upon its efficacy. Amongst these I must enumerate an observing, practical physician, on whom, judging from his work, the firmest reliance can be placed. As physician to the *Manchester Infirmary*, Dr. BARDSLEY has had ample opportunities of practically ascertaining the value of those remedies which modern science has presented to our use. He published in the year 1829 a work entitled "Hospital Facts and Observations," illustrative of the efficacy of the new remedies, strychnia, brucia, &c., &c., and he has, with a conscientious love of truth, detailed the unfavourable as well as the favourable cases which he treated. He mentions twenty-three cases of paralysis, for which he had recourse to strychnia, and he furnishes us with a tabular view of twelve more; these have brought him to the conclusion that strychnia is entitled to a very high rank in the Materia Medica. It was sometimes administered without any benefit, at others with partial advantage, but in the majority of instances with most decided success. He recommends it in such cases of paralysis as seem to arise from diminished nervous excitement; he thinks it likely to prove more serviceable in paraplegia, unconnected with spinal disease, than in hemiplegia, though he feels confident that it will not unfrequently be found an important remedial agent even in hemiplegic paralysis. He considers it in chronic diarrhœa a safe and efficacious remedy; he tried it also in amenorrhœa, and he deduces from his trials that, first, strychnia cautiously administered is a safe and useful remedy in paralysis; secondly, that it will occasionally be found serviceable in chronic diarrhœa and amenorrhœa.

In "RUST'S Journal" you will find during the last year a report from the *Hôpital de la Charité* at Berlin, with the result of the trials of the new remedies; amongst these the nitrate of strychnia was employed in several cases of paralysis, arising either from cerebral hæmorrhage, poisoning with lead, rheumatism, or tabes. You will find in THE LANCET for Oct. 1836, a view of the symptoms induced by the various doses, and you will learn that the instances of cure were not many. In the same volume of THE LANCET which contains a translation of that report, you will see that Dr. SCHAIBLE has recorded in one of the foreign journals, his observations on the administration of strychnia in the commencement of paralysis, with atrophy of the right lower extremity; in complete paralysis of both lower extremities, in a boy affected with epilepsy, whose right arm commenced to fall away; in incontinence of urine, and in dysenteric purging. In these cases, a brief outline of which he has given, he has succeeded, and he affirms that he has administered the nux vomica, joined with gum arabic, and occasionally with decoction of columbo, with the greatest advantages in cases of dysentery and purging.

You will find that strychnia has been employed in very many other diseases, as, for instance, in diabetes, and deafness; our periodicals, indeed, abound in successful cases, sometimes by doses that excite the utmost astonishment. Thus, Dr. FOSBROKE treated obstinate deafness and amaurosis in a young woman, successfully, by the application of strychnia to a blistered surface behind each ear, and he gradually augmented his dose to twelve grains. I cannot but agree with Dr. THOMSON, when speaking of the apparent uncertainty of strychnia, and mentioning that one-twelfth of a grain sometimes acts powerfully, that such discrepancies are attributable either to the inefficient mode of prescribing the medicine, or to its impurity. I have no doubt that in the majority of cases it is to the badness of the drug that we are to ascribe its inefficacy in small quantities. Almost all that which was formerly in the shops contained a larger proportion of brucia than of strychnia, and the activity of the medicine is in the inverse ratio of the quantity of the brucia, one-sixth part of a

grain of pure strychnia being equal to one grain of brucia. It must be remembered that now our Pharmacopœia has given us a formula from which we must expect uniformity in the preparation, and that a single grain dissolved in two drachms of distilled vinegar, will afford a remedy of which four or five drops will speedily produce twitchings in a paralysed limb. There is a case on record of a lady for whom strychnia was prescribed; the dose not being known, but which was diminished on occasion of the following occurrence, to one-tenth of a grain, three times a-day. Soon after taking the pills containing the strychnia, in the morning, she was seized with spasm of the muscles about the larynx, and those of one arm. She felt as if she was strangled. With much effort she mixed some eau de Cologne with water, "snapped at it," and so swallowed it. She was shortly relieved. The dose of strychnia was repeated between breakfast and noon. The same symptoms were renewed; she felt and looked as if strangled. The muscles on each side of the larynx became tense like chords. She was again relieved by eau de Cologne, which she took hastily, as before.

The mode of ascertaining that strychnia is pure, is by adding to the mixture a small quantity of nitric acid; the deeper the red which is produced, the larger must be the quantity of the brucia present, and no strychnia should be medicinally employed that is tinged more deeply than a pale reddish-yellow hue by the nitric acid.

ON THE CURE OF

INTERMITTENT FEVER,

BY

PURGATIVES AND QUININE,

AND THE EMPLOYMENT OF BLEEDING AS AN ACCESSORY.

To the Editor of THE LANCET.

SIR:—I have this morning read a communication in THE LANCET, from Mr. Mackenzie, of Kilsby, "on bleeding in the cold stage of intermittent fever," wherein a case is reported, successfully treated by venesection and purgatives. Its author regrets that bleeding is not more generally practised than it is.

For my own part I must confess that, though a great friend to *the lancet*, I strongly object to its employment, under ordinary circumstances, in the treatment of agues. I am confident that with many, particularly those practising in tropical countries, bleeding has become *too general* and indiscriminate. If an intermittent fever should occur after a preliminary indisposition, one cannot be too careful in the use of the lancet.* In the succeeding observations I shall endeavour to discriminate between those cases which require bloodletting for their cure, and those which are curable by other means, wherein bleeding, in some instances, would be not only unnecessary, but injurious.

It is a fact very well known that, in hot countries more particularly, ague is often accompanied with visceral disease, assuming more or less an inflammatory character. The organs mostly affected are the liver and the spleen; the latter, though comparatively seldom affected in temperate climates, is very commonly the seat of disease within the tropics.

Should we, then, be consulted by an individual who tells us that he has ague, and we detect in him, by a careful manual examination of the abdomen, liver, or spleen, disease, we could hardly expect to cure him of his ague, unless we directed our attention to the state of the internal viscera, and prescribed means which were adequate to their relief. Bleeding in such a case would be indispensable. Those who are favourable to *v. s.* at the commencement of the rigor, do not employ it with the idea of relieving any local disease that may co-exist, but with the view of preventing a return of the paroxysm, and which I verily believe, after no inconsiderable experience in the treatment of intermittent fevers, to be as quickly and permanently obtained by purgatives and quinine alone.

It was in Calcutta, A.D. 1834, that I first saw the practice adopted, by the late Mr. Twining. He strongly recommended me to try it. I had then just arrived in India, and I determined to follow the recommendation of my friend. After having done so for a couple of months, in almost every case that came under my care, I began to dislike so routine a measure, and determined to ascertain for myself the utility of the proceeding.

I quickly found that bleeding, though performed in strict compliance with the rules laid down by Mr. Twining, was attended with no appreciable advantage; and when practised on the effeminate Hindoo it was decidedly injurious. I did not find that those who were bled recovered sooner than those who were not; neither did I find that the former were less liable to a relapse than the latter.

I have treated successfully a great number of cases of ague with purgatives and quinine alone, and have never found it ne-

* Vide page 577, et seq., in "Twining's Illustrations of the more important Diseases of Bengal," where are to be found some judicious observations on bleeding in intermittent fevers, cautioning the practitioner against its general adoption.

cessary to bleed, where there were not other and important indications requiring that evacuant. In those cases where it has happened that the disease has been cured by bleeding, after the more usual remedies have been said to fail, I cannot help thinking that there has existed some visceral disease which had been overlooked; and if so, we can easily understand why *v. s.* proved so efficacious. For if, under ordinary circumstances, bloodletting be so valuable a therapeutic agent, when performed on the accession of the cold fit, why do not its advocates trust to it alone, and not prescribe additional *remedies* to succeed it? If bleeding be practised alone, and purgatives and quinine be not employed, it will be found to fail, but if purgatives and quinine be used, independently of bleeding, we shall then invariably succeed. If *v. s.* be resorted to, and *followed* by the use of purgatives and quinine, as is generally the case, the successful issue must be attributed to the remedies which have succeeded the operation and not to the operation itself.

I speak this with confidence, after having carefully witnessed in my own practice abroad, particularly when in China, where it was by no means limited, the effects of either mode of treatment, both singly and conjointly.* I need hardly observe, that I am most perfectly convinced of the practicability of curing intermittent fever, not complicated with visceral disease, as quickly and permanently without bleeding as with it.

It happened on board the *Moffard*, formerly one of the East India Company's ships, where I officiated as surgeon, that our worthy skipper refused to supply for the ship's use, in spite of my remonstrances, a further stock of quinine, on leaving China, declaring, that at sea we should "have no sickness;" and "what, then, would be the good of physic?" It happened that at Macao we were detained, where I should suppose we were exposed to a fresh source of malaria; the consequence was, that we had scarcely lost sight of land, before four of those men who had but some days before experienced ague at Whompoa, were attacked again, and, at last, we mustered ten cases, without having any quinine on board. From my previous experience of *v. s.* I had lost all confidence in it, but at length, knowing not what else to do, I was almost driven to employ it; but, alas! with no better effect than before. Desirous, of course, to do all in my power for these poor men (two of whom were officers, and one the son of your able contemporary, Dr. James Johnson), in addition to more ordinary means, I administered emetics, in the cold stage, and employed cold affusion, but to little purpose.

Bleeding, cold affusion, and emetics, I have considered to be of pretty equal utility in the treatment of intermittent fevers, occasionally rendering the paroxysm less severe and protracted.

On our arrival at St. Helena, I procured some quinine, which, together with other adjuvants, soon restored our invalids to health, although by this time they were suffering from local dropsies, &c., &c., the sequences of ague.

In a paper lately published in the "Medical Gazette," by Mr. Nash, after alluding to the infrequent bloodletting required by the native Indian, that gentleman has observed,—"Even in Europeans, however, bleeding in the cold stage of ague is not, as far as my experience goes, an admissible practice. The late Dr. Twining, of Calcutta, a man remarkable for his accuracy of diagnosis and skilful treatment of disease, tried the experiment pretty largely among the Europeans in the General Hospital at Calcutta, but I did not think that the benefits derived from the practice were sufficient to cause its adoption. The disease is perfectly under control by other means, and the loss of blood only diminishes the general powers of the constitution, at the very time that they are required to bear up against the returning tendency of the complaint."

Allow me, in conclusion, to observe, that purgative medicines, especially calomel, are indispensable in ague. Without them quinine is only of occasional service.

The captain of a small ship lying off Whompoa, asked me how he could cure his men of the ague; they all of them, he said, had it but himself. He told me that he had given to each of them large and frequently-repeated doses of quinine, but it did no good. I desired him to give to each man a full dose of calomel and jalap, followed by a sharp dose of Epsom salts and senna, and to discontinue the quinine until after the operation of the purgatives. The result was successful; they were all well in a few days. This fact points out the necessity of unloading the alimentary canal, thereby removing morbid secretions, and improving the secreting and excreting functions.

Many mild cases I have found curable by purgatives only, which operate, perhaps, by improving the general powers of the constitution, and thus enabling it to withstand the unhealthy influence of malaria.

Hoping that you will consider these observations not unworthy the columns of THE LANCET, and with many apologies for the length to which they have unintentionally extended, I remain, Sir, your obedient servant, &c.

JAMES GEORGE DAVEY, M.R.C.S.L., &c.
3, Mile-end Terrace, Portsmouth,
Aug. 26, 1837.

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* A mere fraction of a medical man's practice when in a foreign port, is confined to his own ship, as none but the largest, and those ships which carry passengers, have surgeons.

UNIVERSITY COLLEGE HOSPITAL.

ABSTRACT OF A

CLINICAL LECTURE

BY DR. ELLIOTSON, ON REMARKABLE

CASES OF SLEEP WAKING;

AND ON THE EFFECTS OF

ANIMAL MAGNETISM

ON PATIENTS WITH NERVOUS AFFECTIONS.

Dr. Elliotson last week lectured on some cases, in which animal magnetism, or mesmerism, had produced what he regarded as remarkable effects. The first case was one of epilepsy, occurring in a girl sixteen years of age, a housemaid of diminutive stature. She had been subject for twelve months before her admission, on the 4th of April, 1837, to attacks of epilepsy, which occurred about once a week, or oftener. At twelve years of age she had a fall, by which she was stunned; this was worthy of remembrance. She was subject to almost constant headachs in the morning and evening; they also came on a short time previous to the occurrence of a fit, and sometimes shooting pains across the occiput preceded the fit for a few days. She also experienced before the fit came on a sensation of coldness, which ran up the spine, and was attended with numbness, which, when it reached the head, produced the feeling of her being stunned, and then she lost consciousness. The fit was characterised by convulsions, chiefly of the face and trunk; the extremities were in a rigid state, the hands clenched, the face variously contorted, the eyes rolled. This state was not followed by coma, but with a restlessness and sleeplessness, and a severe throbbing pain of the head, which generally continued for three or four hours. She had been cupped on the shoulders last January, and had leeches applied to the temples, and took some aperient medicine. She had a fit last night; the fits usually come on in bed during the state intermediate between sleeping and waking. Complained on her admission of headach, and sickness after food; tongue clean, appetite bad, bowels regular.

The peculiarity in this case consisted in the fact of the patient, as soon as the convulsions of the epileptic seizure were over, subsiding into a restless, fidgetty state, which lasted three or four hours, instead of falling into the state of coma which is usual in this affection. In the treatment of the case, at first, as the pulse was not full, it was thought there was no necessity for bloodletting, and low diet was considered sufficiently active antiphlogistic treatment; and on the 4th of April quarter grain doses of nitrate of silver were commenced, and given three times a-day: the dose was increased by a quarter of a grain gradually, until she reached two grain doses three times a-day. On the 9th the report stated that since the last fit, which occurred on the 6th, she had suffered from continual pain in the temples, and, indeed, all over the head, and it was found necessary to take blood, which was buffed and cupped. She was now subject to similar attacks, and it was found necessary frequently to bleed her; the pulse was hard and full. On the 16th of May she was bled to eight ounces; on the 20th to eight ounces; and on the 23rd ten ounces were taken away. The nitrate of silver was being increased all this time gradually. She took this medicine for six weeks from its first commencement; he (Dr. E.) never gave it during a longer period, for fear of discolouring the skin. On the 27th of May, the fits being as frequent as before, though the nitrate of silver was given in two grain doses, that medicine was discontinued, and the cuprum ammoniatum in quarter of a grain doses was commenced, and given three times a-day, the dose being increased by a quarter of a grain twice a-week. On the 5th of June she was taking one grain doses of the medicine; this produced sickness, though, as has been stated, she bore two grain doses of the nitrate of silver. As the copper produced this nausea, the dose was diminished to three-quarters of a grain; and as this now, also, produced sickness, on the 10th she took one minim of creosote with each dose of it, and this effectually prevented the nausea, and the copper was again increased to grain doses. On the 16th the report states, that there has been no nausea and no fit. On the 17th, however, the nausea returned, and the creosote was increased to two minim doses, with the effect of checking the sickness, and she bore the copper well. On the 20th the dose was increased to one and a quarter grains. On the 24th there had been no fit, and there was no nausea. Soon after she began the copper, which had not produced any decided effects, another agent was called into action in the cure, and any alteration in the state of the case, he (Dr. E.) considered was to be ascribed to this. Under this treatment, which he should shortly speak of more fully, the fits ceased altogether, and instead of the patient having convulsions as she used to have, she was now seized with fits of somnambulism, or, as it had been proposed to call the state, somno-vigilium, a much more appropriate term, and one which expressed the condition better, the patient being both asleep and awake, and walking not being necessary for its existence, that symptom being present in only one species of the affection. All at once she would become perfectly insensible, but her eyes would remain wide open, but perfectly insensible to the effect of light: pulling her hair produced no impression on her.

Her sense of hearing was lost to all ordinary sound. Though her eyes were open yet she was perfectly blind; when you dashed the fingers suddenly towards her eyes, there was no winking. Her tongue was not tried, but it is probable her sense of taste was gone. She had never, in her own recollection, had the sense of smell. Yet though now totally without external sensation, she was constantly talking, and talked very sensibly, and wittily too; but from the great variety of topics her conversation embraced, it amounted to rambling. She displayed, also, a great spirit of mimicry. This state had been commonly called somnambulism; somno vigilium, as he (Dr. E.) had said, was a better term, for this patient could neither stand nor walk, but laid in bed, during the attacks. This state would cease as a fit of epilepsy or hysteria ceases. She would become suddenly still, look wild for an instant, rub her eyes, be sensible of everything around her, and resume her natural character, which was that of a quiet, modest girl. These attacks were remarkable, both from the sudden manner in which they came on, and the equally sudden manner in which they went off. As she could not be awakened by external impressions made on her, Dr. Elliotson determined on trying what would be the effect of producing a strong internal sensation in her, and endeavoured to get her to believe she was likely to fall to the ground. For this purpose she was lifted from the bed, and it was found that she could not stand; she was then supported under the arms, and at first she felt the ground slightly, then afterwards gradually got a proper feeling in her feet, then by degrees she began to step out, and, with assistance, at last walked firmly. She suddenly awoke during the walk, ceased to speak, appeared lost for a moment, then moved her head, seemed astonished, and awoke, and walked to bed well. She was shortly after laid on her bed for repose, and no sooner was this done than she fell again into the same state. In a moment she again became senseless, her eyes again, though wide awake, lost their sight entirely, she talked again in the same rambling way, and was again as rude in her mimicry as before. She was again taken up, and walked about, and was instantly restored, and remained in her natural state for a week. At the end of a few days the same kind of attacks again came on. Nothing had made so great an impression on him (Dr. E.) as to see the brain, as instanced in this case, completely senseless, and yet the mind wandering and active, in two or three moments the patient, losing all external sensation, which was suddenly again restored, again lost, and again restored. Some similar symptoms were observed in a common epileptic fit, such as the person in a moment becoming perfectly senseless, and as suddenly becoming sensible, but the intellect, as in this case, was not active during the state of external insensibility. After a few weeks the character of these attacks completely changed; she still wandered in her talk, displayed the same spirit of mimicry, sang, whistled, danced, was rude, noisy, laughing, or miserable, by turns, but she also retained in these attacks all her external senses; she saw, heard, and walked well, and the power over the voluntary muscles was entire; she was now in a state of what was called ecstatic delirium; the attacks coming on suddenly, and as suddenly ceasing, no symptoms of phrenitis being present, the attacks lasting a few hours, and coming and going like attacks of epilepsy. There you might see her in the ward singing, dancing, and mimicing every individual; sometimes swearing, sometimes rather affectionate; then the attack going off as suddenly as it came on; she seemed lost for a moment, then began to smile, look pleased, and at once became herself again.

Now, they (the students) were aware, that when affections of this nature attacked persons while asleep, and they were partially awakened, the state they were then in was called somnambulism; but when the attacks came on while the persons were awake, and they became half asleep, the result was ecstacy. The one term he had employed, that of "sleep waking," applied to both these states. Sleep waking was much more extraordinary in some persons than in others. This patient recollected in one paroxysm what occurred in former ones, but when out of the attacks she forgot all that took place in them. She had a memory of circumstances which happened in the fits during the presence of the fits only; but she also remembered in the fits those things which occurred out of them. The eyes of this patient converged towards the nose, one rather more so than the other; he (Dr. E.) wished to know if she saw double; she appeared to see everybody, but her vision was much disturbed, for she never winked when the fingers were pushed suddenly towards the eyes, and when one finger was held up she said there were two; when two, that there were four; then she often said that people's "eyes were turning round," &c. This double vision was a common occurrence when one eye converged more than another, and arose from the adductor muscle on one side being drawn aside. When a watch was held to her, she could not tell the minute hand from the other, and it all appeared confused to her, though she seemed to the looker-on to have perfect vision. This symptom had been remarked in other similar cases, as well as the effect also of light on the iris, and pushing the fingers against the eyes, which produced no winking. Gall had mentioned a case similar to the present one, occurring in a young man

sixteen years old, who had extraordinary attacks from time to time. "He was agitated in bed without consciousness; his movements and gestures showed a great activity of many internal organs; whatever was done to him he did not perceive it. At length he jumped out of bed and walked hastily in the apartment; his eyes were then fixed and open. He (Dr. Gall) placed different obstacles in his way, which he removed with his hand or carefully avoided; then he threw himself suddenly on his bed, was agitated there some time, and at length awoke and sat up, very much astonished at the number of curious persons who were about him." Gall had also mentioned another case, which was told to him by M. Joseph de Roggenbach, of Friburg. "He told me," says Gall, "in the presence of many witnesses, that he had been a somnambulist from his infancy. In this state his tutor had frequently made him read; made him look for places on the map, and he found them more readily than when awake; his eyes were always open and fixed; he did not move them, but turned his whole head; many times they held him, but he felt the restraint, and endeavoured to liberate himself, but did not awake. Sometimes he said he should wake if they led him into the garden, *and this always happened*." Cases of this kind on record, said Dr. E., were endless; at first we were induced to smile at them, but we must look at the respectable authority from whence they came. A case also was on record, of "a miller, who, dreaming, and with his eyes open, would go into his mill, enter upon his usual daily occupation, and return to bed, by the side of his wife, without remembering in the morning anything he had done in the night." Professor Upham had spoken also of "an American farmer, who rose in his sleep, went to his barn, and threshed out five bushels of rye, in the dark, separating the grain from the straw with great exactness." Dr. Blacklock, the blind poet, on one occasion, rose from his bed, to which he had retired at an early hour, came into the room where his family were assembled, conversed with them, and afterwards entertained them with a pleasant song, without any of them suspecting he was asleep, and without his retaining, after he awoke, the least recollection of what he had done; and Dr. Haycock, professor of medicine at Oxford, would deliver a good sermon in his sleep, nor could all the pulling and pinching of his friends prevent him. In another case, the subject who walked in his sleep, used to tell the occurrences as though they had happened in a dream. In *Frazer's Magazine*, some time since, a case of an American lady was recorded, who, during the time she was asleep, would preach long sermons, and amazed her family by her nocturnal eloquence; "and it was customary," says the relater of the case, "at tea parties in New York (in the houses of medical practitioners), to put the lady into bed in a room adjacent to the drawing room, in order that the dilletanti might witness so extraordinary a phenomenon. We have been told by ear-witnesses, that her sermons, though they had the appearance of connected discourses, consisted chiefly of texts from Scripture strung together. Some of these sermons, we believe, have been published." Now, this, said Dr. Elliotson, could take place in ordinary sleep, when the mental faculties were in a state of great activity. The fragment published by Coleridge, under the title of "Khubla Khan," owed its origin to the following incident:—He fell asleep while reading a book, just as he came to the words Khubla Khan; during his sleep he composed a long poem, descriptive of the palace of Khubla Khan; and when he awoke, he endeavoured to recall to memory the poem composed during sleep; he was writing it out, when he was disturbed by a visitor, who completely drove the train of thoughts out of his head; he could not recall it, and thus he was unable to finish the description which he had so wonderfully begun. If this could occur in common sleep, why in diseased sleep might not cases like those recorded above occur? Now, in sleep, we observe, occasionally, increase of some of the mental powers, while there is a decrease of others. For instance, the conception we have of different persons we see in this state is so strong, that though we are not intelligent enough to see the absurdity of considering them present, when they may be either dead or in foreign lands, yet they are so vividly conceived, that we cannot overcome the conception that they are present. So, in sleep, the sensation of shivering, without our really being cold, is very intense, and our sensation of warmth the same. So, in common dreaming, there is a great partial excitement in the brain; and so, in deep sleep, or coma, and in sleep waking, we are partially awake and partially asleep, some faculties being less, some more, than usually excited. Some persons are able to do in sleep what they could not do when awake, and poems have been composed in this state which could not have been composed had their authors been awake. We find numbers of instances of this increase of power in particular faculties during sleep mentioned by writers. Persons in their sleep have often passed over the most dangerous precipices with perfect safety, though they could not have done so had they been awake. In these instances, the facts may depend on the faculty or emotion of fear being asleep, the absence of fear making the passage safer from the person being steadier. In sleep, however, things could be sometimes done which the person could not effect when

awake, and in which the absence or presence of fear could have no effect; for example, the following instance of increase of muscular power during sleep might be mentioned:—One Sunday Mr. Dubrie, a musician, at Bath, attempted in vain to open a window that happened to be nailed down in his bed-room. At night he rose in his sleep, and made the attempt successfully, but threw himself out, and broke his leg. Numerous instances of extraordinary muscular movements, effected during sleep, and which could not have been done in a waking state, were on record. Lord Monboddo describes a sleep-walking girl in Scotland, about sixteen years of age, who in her fits, which began with drowsiness ending in "sleep, or what had the appearance of sleep, for her eyes were close shut," would leap upon stools and tables with surprising agility, and run with great violence and much faster than she could do when well, but always with a certain destination to some one place in the neighbourhood, and to which place she often said, when she found the fit coming on her, that she was to go; and after she had gone to the place of her destination, if she did not there awake, she came back in the same direction, though she did not always keep the high road, but frequently went a nearer way, across the fields, and though her road, from this reason, was often very rough, she never fell, notwithstanding the violence with which she ran. But all the while she ran her eyes were quite shut, as her brother attests, who often ran with her to take care of her, and who, though he was much stronger, older, and cleverer than she, was hardly able to keep up with her. Now, it is not the case, that any particular sense is always dormant in this condition; there is great variety both in the faculties which are affected, and in the amount of torpor. Some persons seem to be insensible to light, not perceiving a light when one is near them, however strong, while they hear the slightest possible noise. An Italian nobleman, named Augustin Forari, was subject to sleep waking, and on one occasion was watched by Signor Vigneul Marville, who gave the following account:—"Signor Augustin, after playing at cards, retired to repose, and his servant said his master would walk that night; he was lying upon his back, and sleeping with open staring eyes, a sure sign, as we were told, that he would walk in his sleep. I felt his hands, and found them extremely cold, and his pulse beat so slowly that his blood appeared not to circulate. We played at backgammon until the spectacle began. It was about midnight, when Signor Augustin drew aside the bed-curtains with violence, and put on his clothes. I went up to him, and held the light under his eyes. He took no notice of it, although his eyes were open and staring. Before he put on his hat he fastened on his sword-belt, which hung on the bed-post; the sword had been removed. He then went in and out of several rooms, approached the fire, warmed himself in an arm chair, and went thence into a closet where was his wardrobe. He sought something in it, put all the things into disorder, and, having set them right again, locked the door and put the key into his pocket. He went to the door of the chamber, opened it, and stepped out on the staircase. When he came below, one of us made a noise by accident; he appeared frightened and hastened his steps. His servant desired us to move softly, and not to speak, or he would become out of his mind; and sometimes he ran as if he were pursued, if the least noise were made by those standing round him. He went into a large court and to the stable, stroked his horse, bridled it, and looked for the saddle to put on it; as he did not find it in the accustomed place, he appeared confused. He then mounted his horse, and galloped to the house door; he found this shut; dismounted, and knocked several times at the door with a stone which he had picked up. After many unsuccessful efforts he remounted, and led his horse to the watering place, which was at the other end of the court, let it drink, tied it to a post, and went quietly to the house. Upon hearing a noise which the servants made in the kitchen, he listened attentively, went to the door, and held his ear to the keyhole. After some time he went to the other side, and into a parlour in which was a billiard-table; he walked round it several times, and acted the motions of a player. He then went to a harpsichord, on which he was accustomed to practice, and played a few irregular airs. After having moved about for two hours, he went to his room, and threw himself on his bed in his clothes, and we found him in them the next morning, for after his attacks he always slept eight or ten hours. The servants declared that they could put an end to the paroxysm only either by tickling his soles, or blowing a trumpet in his ear."

Now, the hands of the person in this case were cold, as was the case in the patient in the hospital now; her pulse was not, however, affected as in the case of Signor Augustin. Now, this nobleman, besides the disturbance of those parts which were excited, went about as if he saw well, but took no notice of the candle being placed under his eyes. Now, this could only be explained on the supposition that a part was sensible at one moment, and insensible at another, he (Dr. E.) was not satisfied with this; and we could only otherwise say, that there was an extraordinary state of the organs of the senses. Now, in many cases, though the eyes were shut, persons walked about, and without running against objects

in the way. The force of habit might explain this in many cases; things we are in the habit of doing daily we do easily, and in sleep the influence of this habit would be exerted. In some instances, however, this was not a sufficient explanation. Perhaps it might explain some of the circumstances in the case of Signor Augustin, but it would not explain the fact of his taking up a stone to knock at the door, or the visits and walkings in strange places which some sleep-walkers took. Now, in some of these cases, there was great excitement of sensibility in regard to light, which, when applied to the eye, caused great pain. But a person could see through a very small aperture; it was astonishing through how small an aperture sight would be carried. The hole made by the prick of a needle in a piece of paper would transmit sight. Perhaps some cases of persons seeing when their eyes appeared shut might be explained in this way, that the eyelids were not quite closed. Yet there were some cases recorded, in which persons had seen through opaque bodies; a case was related by the Archbishop of Bordeaux, of a young ecclesiastic, who, in sleep, would rise, go to his room, take pen, ink, and paper, and compose good sermons—sermons, perhaps, as good as the Archbishop did, particularly if he was old. They knew that Gil Blas said that the Archbishop of Toledo wrote bad sermons in his old age. When this young ecclesiastic had finished a page, he would read it aloud, and correct it. Once he had written *ce divin enfant;* in reading over the passage he substituted *adorable* for *divin:* but observing that *ce* could not stand before *adorable*, he added *t*. The Archbishop held a piece of pasteboard under his chin, to prevent him from seeing the paper on which he was writing; but he wrote on, not at all incommoded. The paper on which he was writing was then removed, and another piece substituted; but he instantly perceived the change. He wrote pieces of music in this state, with his eyes closed; the words were under the music, and once were too large, and not placed under the corresponding notes. He soon perceived the error, blotted out the part, and wrote it over again with great exactness. Perhaps, said Dr. Elliotson, you may pay no regard to this and other such cases which are recorded; but let us hear a case related by Dr. Abercrombie. It was that of a poor girl who looked after cattle at a farmer's, and slept in a room often occupied by an itinerant fiddler of great skill, and addicted to playing refined pieces at night; but his performance was taken notice of by her as only a disagreeable noise. She fell ill, and was removed to the house of a benevolent lady, whose servant she became. Some years after this change, she had fits of sleep-waking, in which, after being two hours in bed, she became restless, and began to mutter, and, after uttering sounds precisely like the tuning of a violin, would make a prelude, and then dash off into elaborate pieces of music, most clearly and accurately, and with the most delicate modulations. She sometimes stopped, made the sound of tuning her instrument, and began exactly where she left off. After a year or two, she imitated an old piano also, which she was accustomed to hear in her present residence; and in another year began to talk, to descant fluently, most acutely, and wittily, and with astonishing mimicry, and copious illustrations and imagery, on political, religious, and other subjects. For several years she was ignorant of all around her in the paroxysms; but at about the age of sixteen she began to observe those who were in her apartment, and could tell their number accurately, though the utmost *care was taken to have the room darkened;* and when her eyelids were raised, and a candle was brought near the eye, the pupil seemed insensible to light. Now (Dr. Elliotson said), he was convinced that persons had such an increase of sensibility in the eyes, in some cases, that what appeared dark to us was light to them, and they saw well. He had now a patient, who constantly sat in the dark; when he went to see her, he was always led into the room where she was, and led to his seat; she saw him plainly, but he could not see her for several minutes, though he gradually obtained vision. So, under morbid states, what is darkness to most persons was light to them. No doubt the statement which had been given to Dr. Abercrombie, respecting the case which he had recorded, was correct.

Some persons, however, went farther than this; they stated that people in sleep-waking, not only have seen when their eyes have been closed and bandaged, but have, also, seen when a piece of pasteboard has been held before the eyes, and seen well, too. It had also been said, that people saw with the surface of their bodies, by placing an object at the pit of the stomach; they would tell its colour, &c., and the same by touching it. They also said that some persons perceived tastes of different kinds by the same mode of trial. They went even farther than this, and said that a letter that had been wrapt up carefully, and placed at the pit of the stomach, had been read. We had cases of this kind showered in upon us from all quarters. From France, Italy, Germany, America, and Ireland. What were we to do? One of these cases from America was not a hundred years old, but occurred in 1834, and was recorded by Dr. Belden in the American Journal of the Medical Sciences for that year. The patient, a girl 16 years of age, in these paroxysms, saw with her eyes closed and most carefully bandaged, and in the dark. Sometimes she evidently saw, and was directed by her eyes, for when the

stair-door, which was usually left open, was fastened by the blade of a knife placed over the latch, she rushed from her room impatiently, and extending her hand before reaching the door, seized the knife, threw it indignantly upon the floor, and exclaimed, "Why do you wish to fasten me in!" Generally the eyes were closed, sometimes they were wide open, and the pupils dilated. She almost invariably supposed it was day, and when advised to retire, usually replied, "What! go to bed in the day time?" When a light, reflected from a concave mirror, was once thrown upon her closed eyelids, she exclaimed, "What! do you wish to shoot me through the eyes?" Once, when she was writing out a song, with a black handkerchief over her eyes, a person placed a piece of brown paper between her eyes and the paper on which she was writing, and she exclaimed, "Don't, don't." She played well at backgammon in the paroxysms, and conquered Dr. Butler, an experienced player. Sometimes she displayed astonishing powers of mimicry, though she never did so during the time she was awake. She recollected from paroxysm to paroxysm what occurred in each, but forgot, when awake, what had happened in them, and would declare that she never played at backgammon, &c.

So far as the cases go, said Dr. Elliotson, the details in all of them are more or less like ours, but they go beyond what I have ever seen. It appears that in this last case light must have got through some small aperture; we can scarcely fancy that it was not so. Two cases are recorded from Boulogne, in which patients saw with their stomachs, and tasted what was put there. Whether to believe these things or not, he (Dr. E.) did not know, but he was determined to see for himself before he passed judgment on any of them. He was quite ready to see any cases which might be shown to him. Some reporters went farther than this,—they said that one patient, beside seeing with the stomach, saw, also, with the elbow; and that others described the topography of Paris, though they had never been within hundreds of miles of that city. Others, again, talked strange languages, though they knew nothing about them when awake. There were strange things in sleep-waking, no doubt, but the knowledge of accidental facts, such as the topography of a strange city, and the knowledge of a strange language, could not be credited without being witnessed. Now, the question arose, whether these states could be produced by means of art; they were evidently depending on a diseased state, as epilepsy was. The girl now in the hospital was thrown into the remarkable state by the manipulations which had been called animal magnetising. The gentleman who magnetised her would pass one or both hands gently before her; in a few minutes she would stare, move her eyes, and then go to sleep. This had also occurred in a large number of other instances. Some had said the result was to be attributed to the gentle motion of the hands, as that would sometimes, as was known, send people to sleep; but it could not be so in all cases, as the effects were produced when the magnetiser stood some distance off, and sometimes even by one or two movements. The same thing also occurred in some cases when the movements were made behind person's backs. A parrot of his (Dr. E.) had been sent to sleep by a few strokes down the back, in the morning, a time during which it was never used to sleep. Many persons, again, entirely resisted the influence of the magnetising. He had resisted its influence, as also had many gentlemen who had sat to be operated on. Besides the effect being produced in some persons when at a great distance, and in others by one or two movements, the sleep was sometimes most intense. He thought the manipulation had greater influence than had before been imagined. Now, he had read of all these things many years ago, and felt anxious to know something more about them. In 1829 Mr. Chenevix, who had been in Paris, and practised mesmerism to some extent, was willing to show him the effect of it. He (Dr. E.) took him to *St. Thomas's Hospital*, to try its effects on some nervous patients, in whose cases it is said to do most good. He (Dr. E.) was not satisfied with its effects on any but one patient, and in that instance the results were so extraordinary, that he felt convinced that it was a subject not altogether to be laughed at. The patient was an ignorant Irish girl, who had never seen or heard of the gentleman. She was brought into a private room, and the manipulation commenced; in a minute or two she begged he would not go on, as she said it produced "great weakness in her," and a pain in the abdomen. This pain went off when a transverse motion was made over the part. He (Dr. E.) did not infer much from this, for he thought this effect might be merely imaginary, but when the manipulator suddenly darted his open hand upon her arm, and she suddenly lost the power of it, which was again as suddenly restored by a few transverse motions; and when he showed the same effects on the other arm, and also on the leg, and produced the same results when the girl's eyes had been closed, he (Dr. E.) began to be staggered. On one occasion, too, while she was in this state, the operator placed a very small piece of paper on one of her feet, and then she could not raise that foot, but after a few transverse motions had been made she raised it easily. This occurred again and again. He was satisfied there was no deception there. He was astonished at the effects, and when asked if he was satisfied, he did not say at first either yes or no; he was almost ashamed

to say that he was not. On first seeing a thing of the kind, he thought it excusable for any one to suppose there was collusion, and disbelieve the effects altogether. He had published an account of these experiments in the "London Medical and Physical Journal," for 1829. He was fully satisfied that there was something more than imagination in these things, but he had had no opportunity or time to carry on the investigation, till he heard of Baron Dupotet being in London, who had magnetised for twenty years, and some of whose works on magnetism he (Dr. E.) had read. He was determined to ask him to afford his assistance. The results of the experiments had been the following:—Generally speaking, it took no effect on male subjects, or if it did it was very slight, consisting of slight twitchings of the muscles, a feeling of fulness, and gasping, or catching of the breath,—in many cases not even so much effect as this. These effects were not, however, imaginary; he (Dr. E.) had felt them, and he had expected rather to go to sleep, if there had been any effect. Some, however, went to sleep, who had made up their minds that no effect could be produced, and had determined to resist it if possible. A great number of female patients had been sent to sleep, and so had one male epileptic for the space of ten minutes, not longer; he was, however, decidedly asleep. This effect was all that was produced in him, and this did not always occur. The experiments had been tried on three girls, one of them epileptic, and two of them hysterical. In the first case the girl was sent into a state of decided coma; she had no sensation; she was pricked with pins, and suffered no pain; she did not feel when her hair was pulled. During the time the influence lasted she kept rolling her eyes, or moving her lower lip up and down; when the eyes were still the lip moved, and *vice versa*. Nothing but coma was produced in this case, but she could not open her eyes by herself, nor by transverse movements across them, except these movements were made by the magnetiser himself, as no one else in performing this manipulation succeeded. This was tried repeatedly, and found always to be the case, while the magnetiser succeeded instantly.

With regard to the patient he first mentioned, the effects were most decided; she did not fall into the ecstasy directly after she was magnetised, but the change in the fits came on after she had been magnetised several times. Hence it was not an immediate effect of the process, though it had been produced by it. These paroxysms were, however, decidedly put an end to by magnetism. She would sit during the manipulations, and talk as ramblingly as possible, and be exceedingly abusive, then all at once she would stare about her, close her eyes for a moment, and be quite well again. Now, she was brought out of the attacks so repeatedly and so decidedly, that there could be no doubt that the magnetism produced the effects. There was no imagination acting here, as they had seen her when she sat down, restless and abusive, not knowing that she was to be brought to herself; indeed, not knowing that she was not herself. She only came out of the fits once or twice without magnetism, but was brought out of them three-fourths of the times by that agency, when it was employed, and she had never, he believed, been brought out of the ecstatic delirium without it. Many persons had been convinced of the effects of magnetism by this case, who had not believed in it when only sleep was produced. There was no collusion, he felt convinced, in this case. Another patient, a girl, had been sent into a state of coma by means of magnetism; no pricking with pins, or pulling of her hair, would bring her out of that state. There was, therefore, no doubt that a coma, similar to that of epilepsy, could be produced by magnetism. Her jaw was so fixed that it could not be drawn down by the force of the hand, but when a few transverse motions were made over it, it gave way directly. This girl could not open her eyes until they had been magnetised. There was no deception practised in these things. Baron Dupotet said he would open one sense while the others remained shut. He placed his finger in one of her ears and she heard slightly at first; she then began to hear better, and gradually got to the full sense of hearing, and answered questions; and the last time not only spoke, but fell into a violent rage, and shook an individual, who had offended her, with great force; she sat down, looking the picture of rage, her lips white, and she trembling all over with passion. She was awoke by a few transverse motions over the eyes, and knew nothing of what had occurred during the state of insensibility.

Now, so far as these facts had gone, that is, those that had come under his own notice, he (Dr. E.) believed in what he should call Mesmerism, for Mesmer might be considered the second founder of the system. He (Dr. E.) was never ashamed to declare what he believed; he had little respect for authority when he saw facts like those he had observed in the cases manipulated on by Baron Dupotet; he must believe them. The whole profession might laugh, but he must believe that there was a peculiar power which gave rise to the phenomena which he had observed, and that it was not sufficiently known or appreciated. They were not, however, without the authority of great men, as believers in Mesmerism. Laplace, the great mathematician, second only to Newton, thus expresses himself concerning it:—"Of all the instruments which we can employ, in order to enable us to discover

the imperceptible agents of nature, the nerves are the most sensible; especially when their sensibility is exalted by particular causes. It is by means of them we have discovered the slight electricity which is developed by the contact of two heterogeneous metals. The singular phenomena which result from the extreme sensibility in the nerves of particular individuals, have given birth to the various opinions relative to the existence of a new agent, which has been denominated animal magnetism, to the action of the common magnetism, to the action of the mineral magnetism, and to the influence of the sun and moon in some nervous affections; and, lastly, to the impressions which may be experienced from the proximity of the metals, or of running water. It is natural to suppose that the action of these causes is very feeble, and may be easily disturbed by accidental circumstances; but because in some cases it has not been manifested at all, we are not to conclude it has no existence; and we are so far from being acquainted with all the agents of nature, and their different modes of action, that it would be quite unphilosophical to deny the existence of the phenomena, merely because they are inexplicable in the present state of our knowledge." Cuvier, also, fully admits animal magnetism. "We must confess," says he, "that it is very difficult in the experiments, which have for their object the action that the nervous system of two different individuals can exercise one upon the other, to distinguish the effect of the individual upon whom the experiment is tried, from the physical results produced by the person who acts for him. The effects, however, on persons ignorant of the agency, and upon individuals whom the operation itself has deprived of consciousness, and those other animals present, do not permit us to doubt, that the proximity of two animated bodies in certain positions, combined with certain movements, have a real effect, independently of all participation of the fancy. It appears also, clearly, that these effects arise from some nervous connection which is established between the nervous systems." With the authority of two such individuals, said Dr. Elliotson, one of them a profound mathematician, the other a distinguished naturalist, there could be no disgrace in taking the trouble to inquire into the effects of Mesmerism; not, of course, going to anything supernatural, but only as to its production of such effects as we observed in other cases, such as sleep, coma, sleep-waking, loss of power and sensation in the limbs, &c.; these we often saw. So, also, we had seen persons who appeared to be asleep, but who were sensible to external objects; and, again, we saw some faculties possessing extraordinary sensibility, while others were more obtuse than natural. This was the extent to which the inquiry would be carried.

THE LANCET.

London, Saturday, September 9, 1837.

An appropriate period of the year has been selected for giving some advice to parents and guardians, by the author of a little volume which has just issued from the press under the title of "Verba Consilii, or Hints to Parents who intend to bring up their Sons to the Medical Profession."* The approaching month of October—celebrated in the calendar of British Medicine—brings with it the occasion for many anxious thoughts in the bosoms of hundreds of parents, in the life of whose sons a new era is about to commence.

Between the snares of self-interest and the pitfalls of ignorance, the one spread by their enemies, and the others dug by themselves, the public can seldom step in *any* direction, to the right or to the left, in the business of life, without entrapment; but of all the paths of necessity or of duty, none are more thoroughly beset with the means of plunder and punishment than those which lead across the territories of medicine. Yet, reflecting on the peculiar advantages which would be derived from perfect freedom in the road, and its entire clearance from toll-collectors and freebooters, it would seem marvellously strange that no measures of police are demanded by the community to frustrate the agents of plunder and annoyance who line the way. The neglect, however, can be ascribed to no other cause than inability to distinguish between just payments for preserving the path, and pecuniary levies which marauders enforce from every traveller who journeys in that direction. It is this alone which enables us to account for the exhibition of so much patience on the part of the public. The great mass of the public are, in fact, wholly unconscious of

* By Wm. Hempson Denham, F.R.C.S. London: John Churchill, 1837. 18mo., pp. 101.

the wrongs which are thus inflicted on themselves and on the noble art of medicine. Such a volume, therefore, as that of Mr. DENHAM, comes most usefully to the aid of medical reformers and the independent portion of the medical press, in their assaults on the authors of those wrongs.

The volume of Mr. DENHAM is suitably dedicated to a brother practitioner, Mr. BEDINGFIELD, of Stowmarket, for whose "attainments as a surgeon, and worth and "integrity as a man," and whose ability as a teacher, the author expresses the highest respect, and thus testifies his esteem. The author does not adopt as his text, in so many words, "The absurdities, inefficiencies, and iniquities of the Certificate System," a topic which has lately more immediately occupied our attention in this part of our journal, but every one of his illustrations of the present wretched system of medical education furnishes suitable comments on that subject, to which we shall again and again return. As, in general politics, a multitude of lesser evils must succumb simultaneously with the fall of one great abuse, so, in the politics of medicine, a score of petty grievances would subside with the abolition of that one monstrous abuse, which especially, therefore, demands the opposition of the honest advocates of a new scheme of medical education. It is, moreover, the stone over which the senate of the new Universitiy may chance to stumble,—the one corruption after which the self-entitled friends of a liberal plan of education in that institution, will exhibit yearnings of attachment. Strange should this feeling vent itself in action, for this obstacle would inevitably play amongst their feet the part of a superfluous wheel in an ill-contrived machine, which catches the cogs of every other portion of machinery by which it is surrounded in the vilely operating engine.

MR. DENHAM approaches his subject with a just sense of the present condition of medical law and government. He does not only endeavour to show to parents how to make the best of a bad thing,—he attacks the rotten apparatus itself. At the outset he ascribes "the defective education of "English medical students, the injuries "which the mass of medical practitioners "have so long suffered, and the lamentable "consequences experienced by the community at large, to the faulty constitution of "our medical colleges and corporations." He has not fulfilled his task, however, with so complete a development of the evils of the prevailing system as he might have furnished. The plan of his essay is thus stated in the preface:—

"Having urged the necessity of a vigorous mind, and of a healthy constitution, I have dwelt upon the importance of aiding the natural mental powers of the aspirant to medical fame, by a constant and well-regulated course of training. The mode of study which is thought to be best calculated to ensure that end, has been pointed out, and remarks have been offered upon the propriety of employing the period of apprenticeship, in a way very different to that in which it is spent in the majority of instances. Subjects which should engage the attention of the pupil during that important period of his life, and a considerable knowledge of which might, and ought to, be then obtained, have been incidentally noticed, and advice has been given upon the manner of employing his time and money when the apprenticeship is finished, and he proceeds to London."

The journey *to London* might afford us a text for a volume of comment. Why *to London*,—so often the grief of the parent, the destruction of the student? The metropolis is not a place for youths of all temperaments, although "London" is made to form the most conspicuous word in the present curricula of English medical education. The choice of that city for conducting or completing education, should be strictly optional with all parents, for none so well can balance its baneful temptations and great advantages against individual character, and estimate their relative force upon the youthful mind, before deciding to yield up that mind to its natural impulses for better or for worse. "London" is the central pivot on which the apparatus of the certificate system is made to turn by the monopolists. The expenditure of the student at country

hospitals and lectures affords no profit to the ticket-mongers in the metropolis.

On the motives which should guide a parent in assigning a son to pursue the study of medicine, Mr. DENHAM offers the following excellent remarks:—

"But before parents come to a determination to enlist a son in the ranks of the medical profession, it is of the utmost importance that they should satisfy their minds that the mental capacity of the boy is so constituted for imbibing draughts at the fountain of knowledge, as will fit him to undertake the important task that he will be called on to perform. Unless they are satisfied on this point, the sooner they relinquish the idea of making him a surgeon the better; for, without such capacity, the exertions of teachers, and their own trouble and anxiety, as well as their money, will be sadly misapplied. There is another preliminary circumstance which parents should also well consider; their son ought to be of that hardy frame of body, that he will, as far as probability goes, be able to bear the excessive fatigue and watching which, to a certain extent, fall to the lot of every medical man, of every country practitioner in particular. If he be not, however intelligent he may be, I would earnestly advise them not to make him a surgeon; for, unless the *mens sana* have its domicile *in corpore sano*,—unless he be healthy and hardy, wofully severe will oftentimes be his labour—frequently more than he will be able to perform, without risking the destruction of his health, and not, improbably, of his life. I am anxious to impress upon the minds of all concerned, the importance and comprehensiveness of the task to be undertaken, well knowing that it is commenced by hundreds of youths who have no conception, till it is too late, of the immense tract they will be called upon to explore; and who, when the subject is fairly before them, are dismayed by the prospect, and either sink into cold indifference, or retire altogether from the pursuit, with bitter disappointment."

Mr. DENHAM is an advocate for a "thorough" tuition in "classical learning:"—

"By classical learning I wish to be understood as meaning, not only a thorough knowledge of the *Latin* language, to enable him to 'cull sweet incense' from the works of the old authors, and to write his prescriptions with accuracy and elegance, but also such a knowledge, at least, of the *Greek* tongue, that he may be able to understand the etymology of the nomenclature of diseases, and of the various sciences indirectly connected with that of medicine, nearly all the terms employed in which are either from the Greek or Latin, or are a compound of both. Not only is it necessary that every youth who is destined for the medical profession should receive a liberal education, and be well grounded in classical lore, but they are also indispensable for him in his character of a gentleman; for in whatever part of the world he may be placed, he must, in his professional capacity, frequently come in contact with well-educated men, who, unable to appreciate his strictly medical acquirements, have no means of judging of his professional skill, but by the quantum of learning which he may be found to possess, and by the ease and felicity with which he may understand and discuss the ordinary topics of discourse."

Certainly, no man will object to the *possession* of this knowledge. Opponents of a "classical" education would direct their arguments against the expenditure of so much *time* on the part of youths who are destined to labour in the fields of science, as must be devoted to obtaining a "thorough" knowledge of Greek and Latin. They would object, altogether, in discussing the necessary accomplishments of one who is to become a discoverer in medicine, to the appropriation of whole years to that slavery of the mind which is requisite to render a man "elegant" and "felicitous" in his deportment and conversation, by force of "classical" training and knowledge, especially as is it certain that a good chemist, a good botanist, a good physiologist, will run no risk of passing in society as a poorly-accomplished, under-educated man. They would discuss only the absolute *utility* of Latin and Greek to the medical man, parodying the old proverb, that "Life is short, "and *medicine* is long," and that the road to a thorough knowledge of "the classics" is exceedingly long. It is greatly to be lamented that medicine has any partnership whatever with Latin and Greek; it is much to be regretted that prescriptions were ever penned in a secret tongue, for the character of secrecy truly belongs to the dead languages. Latin would be the language of quackery had custom sanctioned the use of English in prescriptions. Indeed, to resort for terms in medicine beyond the ample verge of our native tongue, is to encumber science, not to assist her; and when it is

remembered that the great mass of *recipes* must be compounded by persons who cannot obtain a Latin education, least of all a knowledge of Greek, confessedly the most difficult of tongues, it becomes a question of national importance whether the observance of the present practice among prescribers should not be everywhere consentaneously abandoned. "Elegance," indeed, in the display of classical learning! Who will advocate the extension of Latin doggrel in prescriptions to the full syllabic measure of the terms? Yet *abbreviations* are the antipodes of elegance in language. The days have passed in which all learning and mental accomplishments centred in a knowledge of the dead languages,—then, indeed, almost the *living* languages, so universal was that knowledge among educated men. In fact, before the period of modern discoveries, there was little else for studious men to learn; but now a dozen sciences, a dozen more effectual keys to the wards of good society, stand arranged before the medical practitioner, some destined for his necessities, others open to his taste and choice. Besides, in advising parents to enter their sons upon a course of "thorough classical learning," it is proper to consider the means of journey through that cold and ancient region. What pedagogue will engage to turn out a thorough classic from his school, while the lad is yet in *his teens*. It is not disputed that much time is wasted in our seminaries and academies for youth; we allude only to the fact, to the realities of an education in Latin and Greek. The facilities for a rapid tuition in those tongues do not exist in our schools. If to learn what is sufficient to render medical students a match for existing absurdities in medical language becomes essential, then the better plan would be to afford to youth the opportunity of devoting an *undisturbed* three months to the study of each language, and so have done with the labour; and, as regards the further invention of new expressions in science,—which at present bids fair to become a congeries of hieroglyphics—we can only say that the same ingenuity which the SWAISSONS of the natural and medical world at present employ in the invention of Greek and Latin signs, might be expended in dressing their objects of research and information in British syllables; or if these philologic artists should be afraid, by the union of such clippings from English words, of exposing to too much ridicule their native tongue,* then it might be wise to resort for terms to France and Germany, whose languages are already, in all respects, valuable to the medical student.

Mr. DENHAM, though with less enthusiasm, recommends the languages of the Continent, as branches of a professional education:—

"In addition to the dead languages already enumerated, there are several living ones, which, though not absolutely necessary to constitute a successful practitioner, are, notwithstanding, highly ornamental and very useful, inasmuch as they will afford, in leisure hours, a fund of pleasure, and open to him a vast source of important information, which he cannot by other means obtain in so perfect a manner. France, Germany, and Italy, particularly the two former countries, have sent the most highly gifted men into the field of medical research, and the splendid productions of their capacious minds will remain, to delight and cheer the scientific inquirer, as long as science herself endures. True, it is, that the works of our continental neighbours may be, and are, translated into our own language, but however faithfully the translations may be executed, the matter will frequently suffer deterioration by the change, and bear the same relation to its prototype, that our own ideas do to what we intend. when they are put into substance by the hand of another."

The author of the "Verba Consilii" also recommends the study of "the elements of "mathematics and logic," and the art of drawing. In doing so, his mind, as the catalogue of acquirements increases, naturally adverts to the question of *time*, and, by a necessary transition, to that of apprenticeships, in reference to which a fact falls under

* Truly, could certain ancient Athenians and Romans arise from the grave, and view the liberties which modern cacologists have taken with their vocabulary, they would again expire,—this time with laughter,—over books even of the gravest science.

consideration which leads to the exposure of one source of those ADVENTURERS in medicine on whom the Poor Law junto of Somerset House fall back, when other means fail to force the able and experienced men who already occupy the field of practice in the parochial Unions, into a compliance with their degrading terms:—

"The profession has, unhappily, had some very badly educated men admitted into its ranks—men who have been initiated into what may be called, a mechanical knowledge of the profession, by certain individuals whose knowledge of maintaining the literary and scientific character of the medical body, are much upon an equality with those which were possessed by the almost-forgotten fraternity of chirurgical Tonsors. The individuals to whom I allude, resident, for the most part, in considerable towns, and engaged, perhaps, in practice of some extent among the labouring classes, have been in the habit of taking, for a trifling premium, one, two, or more lads at a time, as out-door apprentices," to perform the work and drudgery of the surgery, for a period, not improbably, of five or seven years, without once inquiring whether the education which the youths have had be sufficient to enable them to distinguish a coach-wheel from a man-trap. Previous to the *Reform Act*, this system of iniquity was practised to a much greater extent than at present. In fact, the Act just alluded to, by abrogating certain corporate 'rights' has had a beneficial, and, probably, even by its authors, an unlooked-for effect, in checking the further progress of this evil; for parents, whose circumstances are straitened, but who are, nevertheless, ambitious to make a son a 'Doctor,' can see no immediate or prospective benefit to accrue by placing him with a member of a corporation."

The Reform Act was the accidental remedy for this evil, or rather for a portion of it. There needed, however, no such circuitous and indirect mode of rooting out these weeds from the profession. Who handed to these youthful corporators the diplomas, the "licences" to become pests in the field of medicine? The presentation of indentures of apprenticeship to burgesses and corporators, at Apothecaries' Hall and the College of Surgeons, did not ensure for the "badly educated" youths the possession of titles to practise medicine. The legal "qualifications" to fulfil the duties of medical men simply involved an exchange of sheets of parchment for slips of paper called "certificates," with the addition of sundry other slips of paper, termed "bank notes," amounting in number according as the bargain was struck in Bridge-street or in Lincoln's-Inn-Fields. *Without* these certificates even the farce of an examination could not have been obtained; *with* them, the ambition of having a son "a doctor" was amply gratified.

The little volume of Mr. DENHAM, may supply us with texts for comment on another opportunity of reverting to its contents.

A correspondent has forwarded to us, with his name and address, the following statement for publication:—

"A NEW METHOD OF PASSING APOTHECARIES' HALL.—Candidates who are rejected are most strongly recommended to commence CRYING immediately after the sentence of the Examiners is pronounced; this mode of appeal to the worthies of the Hall being likely to prove effectual for candidates in that predicament. A case in point occurred last week. A great boy, on the wrong side of 30, having been rejected, left the room crying aloud. The sentimental event touched the feelings of the Examiners, and the scientific youth was called back, after a few minutes, into the presence of the Board, whence he returned to the "funking" room with his *diploma*, where he forthwith commenced kicking up his heels, and laughing most uproariously, and, finally, placing his dexter thumb to the point of his nose, in an expressive manner, quitted the Hall, perplexed much to know whether the operation of sneering or laughing was most suited to the occasion.

NEW EXPERIMENTS
ON THE
SENSE OF TASTE IN MAN.

IN 1830, MM. GUYOT and ADMIRAULT published a series of experiments on the seat of taste in man, from which they drew the two following conclusions:—

1. The lips, the inner part of the cheeks, the roof of the mouth, pharynx, velum palati, dorsal and inferior surfaces of the tongue, have no share in the production of taste.

2. The sense of taste exists only at the

posterior part of the tongue; along its edges for about a line or two towards the dorsal surface; at the point of the tongue; and, finally, at a restricted point of the velum palati, situate very nearly at the centre of its anterior surface.

In a second memoir, lately published by the same authors, an additional number of experiments has been recorded, together with a solution of the following questions:—

1. Do the gustatory surfaces perceive, with an equal degree of intensity, throughout their whole extent?—No. Taste is much stronger at the base of the tongue, and along its edges the gustatory power goes on increasing from the pillars of the velum palati up to the tip of the tongue, where it is at a maximum.

2. Do the gustatory surfaces perceive indifferently all kinds of savours?—Certain bodies, such as milk, butter, oil, and especially alimentary substances, only produce an impression of tact, at the anterior part, their characteristic tastes being only distinguished at the posterior part of the tongue.

3. Does a sapid body produce an identical taste when applied to different regions of the tongue?—A great number of bodies, and salt in particular, exhibit this very remarkable phenomenon, that the sensations which they produce at the anterior and posterior parts of the tongue are extremely different. Thus, solid acetate of potass, which, at the anterior part of the tongue produces a burning acid sensation, is merely bitter and nauseous when applied to the posterior surface, upon which it produces no acid nor stimulating impression. Sulphate of magnesia, slightly acid and saltish in front, becomes intensely bitter at the root of the tongue. Acetate of lead produces only a sweet taste at the posterior part; anteriorly it is styptic, fresh, and stimulant. The alkalies, the water of lime, and of ammonia, produce only one taste, no matter where they may be applied.

From the very numerous experiments which M. Guyot has performed, both on himself and on other individuals, he concludes—

1. That taste is a physical and not a chymical sense; that it is connected with the nature of bodies, and not with their densities, their temperature, or their consistence. In this respect it differs very considerably from the senses of touch or tact, which are exclusively destined to recognise the physical properties of bodies.

2. That the sense of taste must be exercised by at least two nerves.

Numerous anatomical investigations have led M. Guyot to regard the glosso-pharyngeal nerve as the one which presides over the perception of taste at the base of the tongue, and perhaps at the velum palati; while the lingual nerve, on the contrary, exercises the sense of taste at the point of the organ.

In this point of view the sense of taste, reacting on the glosso-pharyngeal nerve, probably determines the acts of deglutition and regurgitation. By the communications and terminations of this latter it may act simultaneously on the amygdalæ, provoking their secretions; on the glosso-staphyl, which aids in closing the glottis and epiglottis, &c., &c. In the same manner the lingual nerve, receiving sapid impressions at the point of the tongue, may provoke contractions in that organ, and, in a word, harmonize and complete the function.—*Gaz. Med. de Paris.*

THE

FALSIFICATION OF MEDICINES,

AND OF CUBEBS IN PARTICULAR.

The adulteration of medicines, whether simple or compound, though long since practised, is carried, at the present day, to the greatest and most reprehensible extent. The habit of adulterating every thing has become such, that even the most insignificant drugs, either in a commercial or medicinal point of view, pass, nearly all them, through the hands of avaricious and fraudulent falsifiers.

If the druggists contented themselves with simple substitution; if, after the example of certain naturalists, they merely replaced the products of America and the Indies by indigenous products, their conduct, though fraudulent, would still be less blameable; but no censure is too severe for those who, stimulated by a base cupidity, not only cheat their customers, but endanger the lives of their fellow creatures, by mixing inert substances with others of highly active properties.

We had thought that from the peculiarly commercial turn of minds in that country, the habit of extensively adulterating drugs was almost confined to England; but the observations of M. Foy show that it prevails to no less an extent on the French side of the channel. Thus M. Foy assures us, that Marseille is a kind of depôt for falsified drugs of every description; nothing medicinal, in short, is sold without having previously been either diminished in quality or augmented in weight. Does a country apothecary want some quinquina, rhubarb, opium, saffron,—the wholesale druggist will send him a bark which is already half macerated, a worm-eaten root, varnished over

to conceal its defects; an extract of poppies, containing all kinds of foreign substances, &c. Does he want some Copaiba balsam, balsam of Peru, sulphate of quinine, syrup of sarsaparilla, Sydenham's laudanum, unguentum populeum,—they send him down a mixture of Copaiba balsam and old castor oil; a ball of true balsam of Peru, pitch-resin, and sand; some sulphate of quinine doctored with calcined magnesia, or crystallised sulphate of lime; for the syrup of sarsaparilla, they give him a concentrated decoction of burdock and hops, sweetened with molasses; the vinum opii is nothing but some common wine coloured with anything but opium; and, finally, his unguentum populeum is some pig's fat, coloured with a mixture of turmeric and indigo.

The following is a new device for the adulteration of cubebs, which lately fell under the observation of M. Ricord, and which we now lay before our readers, in order that they may be prepared for any similar fraud on themselves.

A few months back, three patients of M. Ricord purchased, on the same day, in different shops, some cubebs-powder. Two out of the three individuals had scarcely swallowed the prescribed dose when they were seized with nausea, vertigo, dizziness, and all the symptoms of narcotism. The use of the medicine was, of course, immediately suspended, and the substance put aside for examination. On an analysis of the adulterated powder, M. Foy has shown the qualities of *pure* cubebs-powder to be briefly these:—an oily appearance of the powder, which easily greases paper; the colour dark, showing, when submitted to the magnifying glass, an innumerable number of small black points arising from the fleshy part of the fruit; the aromatic odour very strong, and *sui generis*; the taste acrid and warm. The adulterated powders, though purchased at different shops, presented so many points of resemblance, that it was impossible to believe that they did not come from the same fabricator. It is unnecessary here to repeat the various particulars in which they differed from the pure powder; it may suffice to say, that a chemical analysis gave every reason to suppose that they were not only adulterated but also rendered poisonous by an admixture with henbane.—*Bul. de Therapeutique*, 15 June, 1837.

UNIVERSITY COLLEGE HOSPITAL.

DIABETES INSIPIDUS.

D. M., aged 31, was admitted, June 27, under the care of Dr. Elliotson.

History.—He states that his general health had always been good, until about four months since, when he became affected with a sense of weakness and coldness in the loins, accompanied with frequent desire to micturate, a sensation of sinking and heat at the epigastrium, and a general feeling of debility. He was under the care of a physician for a month, but experienced no relief from the treatment employed. At this period he discovered that his urine was more than usually abundant, amounting to about six pints in the twenty-four hours, and that it deposited a copious red sediment. From the 14th of March to the 22nd of the present month, he was a patient at one of the London hospitals, but as he did not get at all better he applied at this hospital. He is a tailor by trade, and says his general habits have been regular, and that he has not been much addicted to sexual indulgence. He has been gradually losing flesh and strength from the commencement of his illness.

Present symptoms.—Heat and sensation of sinking at the epigastrium, more or less constant, with a general sense of weakness and inaptitude for exertion, but attended with no pain or tenderness. Skin usually feels dry and hot; tongue and mouth clammy, and commonly parched; tongue red at the tip and covered with frothy mucus; bowels regular; the urine reddens litmus paper, and still (according to the patient) is thick, and deposits a red sediment; exact quantity not yet ascertained.

July 1. Has made five pints of urine during the last twenty-four hours. On examination by Dr. Prout its specific gravity was found to be 1022; it contained no sugar; was not serous or albuminous; nor was there more urea than natural in it. Dr. Prout, however, says it is unnatural, but he can hardly define in what way it is so.

2. Half a gr. of opium, twice a day.

6. Has made four pints of urine. Feels altogether better.

18. Made three pints and three quarters, of the specific gravity of 1015; drinks five and a half pints of fluid in the twenty-four hours.

29. Has been going on well since last report; he is decidedly better, making only from two pints and three quarters of urine to three and a half pints in the twenty-four hours. He was discharged to day at his own desire.

Remarks.—In lecturing on this case Dr. Elliotson observed, that it was one the nature of which was not generally understood. Many symptoms presented in it

were generally present in diabetes mellitus, such as the great debility and the sense of sinking, the dry skin, the clammy mouth, the thirst, the red tongue. Again, in this case, also, the skin was hot, which was sometimes the case in diabetes mellitus; the urine, however, in the last-named affection did not usually contain a deposit, as instanced in the present patient, and when it did the sediment was of a flocculent character. Frequently, in diabetes insipidus, the urea was in excess, the symptoms, as in this case, being nearly those of diabetes mellitus, the saccharine nature of the urine only being wanted. Cases of this kind, like saccharine diabetes, and those in which the urea was in excess, as, indeed, in most affections in which the urine was increased in quantity, were much benefitted by the use of opium, which, in this instance, was of great benefit; the man, though much better, was, however, not cured, but left earlier than he (Dr. E.) wished him to do.

MR. CROSSE'S RETROSPECTIVE ADDRESS.

To the Editor of THE LANCET.

SIR:—In perusing your review of Mr. Crosse's retrospective address in THE LANCET of last week, I find the following paragraph:—"The contributions to the pathology of the fluids have been, Mr. Crosse remarks in his address, but very few; yet of those few he failed to avail himself, by adding to his list a notice of the memoir of M. Donné on the alkaline and acid properties of the saliva corresponding with certain conditions of the stomach." Now, Sir, if you will allow me to refer you to that address in the "Transactions of the Medical and Surgical Association," vol. v., p. 46, you will perceive that this subject has received all due attention from Mr. Crosse, and that, instead of being an omission on his part, the error is in your review. He there plainly states, with reference to the disordered living actions of parts, or pathophysiology, that, "belonging to it are the recent investigations into the condition of the saliva, by Dr. Donné, who finds this secretion alkaline when the functions of the stomach are properly performed, and acid as often as these are disordered; the chemical condition is easily ascertained by familar tests." Hoping that a sense of candour, and a desire of doing justice to the author of the Address, will induce you to take an early opportunity of correcting your statement, I remain, Sir, your obedient servant,

A NORWICH MEDICAL STUDENT.

Norwich, Aug. 28th, 1837.

LABOURS OF MEDICAL REGISTRARS.

To the Editor of THE LANCET.

SIR:—As I am confident that during the ensuing session of parliament great and manifold changes will be made in the New Poor Law, will you allow me, through the medium of your very valuable Journal, to suggest that a great saving, both of time and trouble, to the medical officer, and of expense to the rate-payer, might be effected, by doing away with the present useless and vexatious manner of keeping the medical books. In the first place, we are furnished with two handsomely-bound blank books printed and ruled; and a bundle of blank weekly returns. One book is entitled the "Medical Weekly Return," in which I have to enter the name, residence, age, sex, occupation, name of disease, &c., of each patient. Then, once a week, I have to make a copy of each page, or week's account, on the accompanying blank form, mentioned above, and send it to the clerk's office, sometimes a distance of several miles. The other book is entitled, "Register of Sickness and Mortality," which, with a few additions, is a copy of the other. Now, Sir, what is the use of all this? It appears to me that if the last book only were kept, it would be quite sufficient for every purpose, and effect a saving of at least ten shillings a year in each division of an Union, and spare the medical officer the trouble of sending every week to the clerk's office, which, when at a distance, is the means of diminishing his already beggarly salary; and as our books are audited every three months, and then laid before the Guardians, there could be no underhand-work, especially, as in this neighbourhood, the so-much-per-case system has been abandoned. The money so saved throughout the kingdom would nearly pay the salary of one of the assistant commissioners. I have the honour to be, yours, &c.

S. H. PODE, Surgeon.

Plympton, Devon, Aug. 1837.

CORRESPONDENCE.

The letter of *Le Baron Dupotet de Sennevoy* reached us too late for insertion this week; it shall appear in the next LANCET.

The communications of Dr. Venables, Dr. Burgess, Mr. Tomkins, Dr. Howison, Dr. Dickson, Mr. Lambton, Dr. W. C., Mr. Kilburn, Mr. Radley, Mr. Bree, Medicus, An Old Surgeon, Morgan, and Justitia, have been received, and we hope to find space for most of them in the ensuing week.

The first question of *A Medical Student* we cannot yet answer. The second may be answered in the negative.